

BKOW Portfolio – Heysem Kaya

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1 Introduction and Background

I started my BKOW track in December 2019, shortly after starting my post at Utrecht University. I have a Bachelor's degree from Computer Education and Educational Technology (CET) program that equipped me with pedagogic formation and instructional design, among others. Therefore, in consultation with Dr. Gerard Tel, my mentor and I agreed that I do not need to follow a BKOW course at UU. Moreover, prior to my position at Utrecht University, I served as assistant professor for two years in Namık Kemal University (NKU), Department of Computer Engineering¹, where assistant professors have a high teaching load.

I would like to offer brief statistics related to my teaching experience. So far I have lectured 8 undergraduate and four graduate courses in Turkey and the Netherlands, with different number of students. I have designed two of the graduate courses myself in Turkey and co-designed one at Utrecht University. In Turkey, a semester lasts for 14 weeks, and a lecture lasts 3 hours per week on average. Considering my 10 hours of class-lecturing duty in each of formal and secondary schools (referred as 'Second Education' in App.02) at NKU faculty of Engineering and the Master's courses I lectured in 2018-2019 period; only between Fall 2017 and Fall 2019, at NKU I lectured over 1100 hours, which is higher than 1000 hours of hands-on teaching experience required for BKOW. Together with other hands on activities (tutorials, designing the course/lecture material, evaluating assignments/exams etc.) this amounts to over 2000 hours of hands-on teaching experience. Before arriving at UU, I had supervised over 50 (semesterly) undergraduate projects (over 25 students), and 4 Master's students. At UU, as of December 2021, I have served/been serving supervision to 6 undergraduate and 8 Master's theses as well as co-supervision to 8 Master's students. Combining teaching with research, I have published over 20 conference/journal papers with my Bachelor's and Master's students. Prior to my post as assistant professor (during and after my PhD), I have assisted over 10 courses in Computer Engineering basic topics, such as Database Systems, Operating Systems and Software Engineering. In summary, I have been actively involved in the many facets of teaching such as course design, student / group project supervision, course teaching / coordination at UU and NKU.

1.1 Note on the BKO Dossier

The Dossier I have compiled includes some material prepared during my BKO track, such as BKO observations (with a post-discussion) from co-lecturers who have SKOW; my BKO observations of other lecturers with varying seniority levels (two then were on BKOW track and one with SKOW); Caracal reviews of a selection of courses I co-lectured and corresponding responses; the course plans for the courses I have proposed/designed and lectured prior to coming to UU; a complete syllabus of a course (Human Centered Machine Learning - INFOMHCML) that I have co-designed, co-lectured and coordinated with another lecturer at UU (Dong Nguyen); lecture slides for two lectures that I have prepared for INFOMHCML course; the exam prepared for INFOMHCML course; exemplar announcements/emails sent during INFOMHCML course prepared in consultation with the co-lecturer; a sample feedback (jointly decided/prepared with the co-lecturer) given for INFOMHCML final project; (self-prepared) feedback to a group assignment and a Master's thesis final draft as annotated PDFs; course guides / schedules for the co-lectured courses; student feedback on project (INFOSP) supervision and Master's thesis supervision with a reflection on these; exemplar homework and programming assignments, among others. These primary documents are included in 'Portfolio Contents' folder and have a two-digit numeric prefix that range from 01 to 23. The 'Appendices' folder includes other supporting documents related to teaching qualifications / indicators, some of which earned before starting the BKOW track. The documents in the Appendices folder have an 'App.' prefix followed by a two digit number, to distinguish them from those in the 'Portfolio Contents'. The list of the contents of these two folders are given at the end of this document.

¹ At NKU I served my compulsory duty in the scope of Turkish Higher Education Council's Faculty Member Training Program, which aims to improve teaching/research quality in newly opened / developing universities by training PhD students in leading universities of Turkey and recruiting them back to the developing university.

I hope the material contained in this Dossier will provide the Evaluation Committee with sufficient information to decide about my application for a BKOW certificate.

Before presenting my reflection concerning experiences during BKOW process, I would like to provide a brief overview of my past educational experiences and reflect on what I learned, and how I managed to improve my teaching quality.

1.2 Bachelor's Study: Pedagogic Formation & Educational Technology

The goal of the Bachelor's CET program at Boğaziçi University is to educate teachers of computer and instructional designers who are capable of designing, developing and implementing courses and educational courseware. For this purpose, at each of 8 semesters, the students take one pedagogic course and at least one educational technology related course (for the full list of courses, see App.01 Bachelor's transcript). The pedagogical courses were *Introduction to Education, School Experience I and II, Fundamentals of Guidance and Counseling, Classroom Management, Development and Learning, Planning and Evaluation of Instruction, Practice Teaching in Computer Education*. The educational technology related courses included *Instructional Materials in Education, Fundamentals of computer Assisted Instruction, Instructional Design, Instructional Technologies & Materials Development, Instructional Methods and Media I & II, Internet for Educational Purposes and Principles of Distance Education*, among others. Here, for brevity, I will skip official course descriptions, and focus on what I learned from a selection of these courses.

The first course on pedagogy track was *Introduction to Education*, where we learned the fundamentals of educational science as well as pioneers of education (such as Piaget, Montessori, Vygotsky) and their approaches to education.

The course *Development and Learning* went over the developmental cycles and the corresponding educational perspective, ranging from learning *schemes by infants, formation of trust-mistrust relationship, to the development of autonomy, through Kohlberg's Stages of Moral Development to theory of identity development*.

In *Fundamentals of Guidance and Counseling*, we learned how to handle group and student-wise guidance and counseling, e.g., the importance of providing facilitative conditions such as caring and understanding for students struggling with their personal and/or developmental problems. This course is given also to all students from faculty of education, including the students from *Guidance and Counseling* program. In-class workshops were being organized with random student groups to discuss how to approach/respond to students with certain problems. I should note that, this course contributed to my development of counseling skills that I still use, e.g. in handling Corona related stress and depression commonly felt by students².

The *Classroom Management* course was mainly over methods of handling in class issues, but also about the general structure of the course and the way of lecturing to maximize overt/covert participation and minimize negative interaction among the students as well as between the students and the lecturer. In addition to covering the course material, students presented particular subjects (where my group was tasked with *motivation* subject that went mainly over *Maslow's hierarchy of motivational needs* and their relation to teaching / learning) and as a final project, we prepared an individual portfolio that includes a course plan and materials with elaboration on pedagogical aspects learned in the course.

One of the most influential pedagogic courses I took was *Planning and Evaluation of Instruction*, which was based on Mastery Learning (the professor herself was a PhD student of Benjamin Samuel Bloom and an evangelist of Mastery Learning). Later, in my teaching philosophy, I discuss how this approach has influenced my educational perspective. The final project of course was on writing (teachable, learnable, observable, measurable) learning objectives, organizing them hierarchically

² A recent survey in the NL shows the seriousness of the problem among students:
<https://www.cbs.nl/nl-nl/maatwerk/2021/43/psychische-gezondheid-in-nederland>

(in a directed acyclic graph, so as to find the root cause of learning difficulties after testing) and in a consistent manner and writing exam questions (two questions for each learning objective at each exam). The course paid strong emphasis on prerequisites (hence the strict organization of the learning objectives from facts through comprehension to application, analysis and synthesis) and corrective feedback. Thus, to allow formative feedback, the prospective teachers were advised to prepare two parallel exams (containing different questions to assess the same set of objectives) and provide corrective feedback after the first exam. As a side note, I would like to mention that over 80% of the students could not manage to complete the course and dropped out, the rest had stress related issues but could manage to complete with high success. I myself lost 5 kilograms of weight (partly due to my perfectionism and partly due to that of the professor) and started to have gastritis related problems for the first time. This is yet another big lesson I learned: however great and important the theory / the subject, it shall never compromise students' health!

The courses in the educational technology / instructional design track ranged from learning tools and programming to develop courseware (e.g. then Macromedia Flash & ActionScript, ASP.Net), to developing a complete educational courseware on a subject with educational theories and instructional design principles in mind, applying them on respective students with pre- and post-tests (including a control group) and evaluating the effectiveness and usability of the developed courseware. Looking back, I see the importance of each and every course in my academic life. Lastly, I am happy to note that I graduated the BSc program with top GPA in the department in year 2006.

1.3 Reflection on Teaching Experience Before Utrecht University

In Namik Kemal University, I lectured seven undergraduate and two graduate courses in between 2017 Fall and 2019 Fall semesters (all by myself, four of them are completely self-designed). In Fall 2016 and 2017, I taught Introduction to Programming (in MATLAB/Octave) to second year mechanical engineering students. Starting in 2017 Fall, I taught Numerical Analysis and Project I (Graduation Thesis part I) in Fall semesters; Discrete Math, Project II (Graduation Thesis) and senior selective Machine Learning course in Spring semesters. Observing that one third of the students failed the selective Machine Learning course in Spring 2018 (partly due to their poor math background and partly due to lack of prior MATLAB/python experience), I decided to offer Numerical Computation Programs course (using MATLAB) in Fall 2018. Having met the necessary prerequisites, the students were more responsive and overtly participating to Machine Learning course in 2019 Spring semester and the proportion of students succeeding the course increased from 65% to 90%.

I lectured a graduate course (self-designed) each semester. I offered Multimodal Signal Processing with MATLAB (the course plan proposed to Institute of Sciences is included in App.03), as the first step of analysis in multimodal affective computing study I intend to conduct with my MS students. The second course (Pattern Recognition for Behavior Analysis, see App.04) aims to focus on the machine learning methods with their application to multimodal behavior analysis with effectiveness, efficiency and explainability considerations. These two course plans are included under 'Appendices'.

In my senior selective Machine Learning course, I followed Introduction to Machine Learning (by Ethem Alpaydm) and gave four programming assignments. The assignments include but are not limited to basic concepts such as bias/variance dilemma for regression, multivariate parametric classification, dimensionality reduction (implementing PCA and LDA), clustering (implementing K-Means or K-Medoids) and logistic regression. In Project I course that I taught in Fall semesters, I firstly introduce the paralinguistics and affective computing basics, their processing pipelines and the stages. Then I deliver over 20 topics related to pipeline stages (e.g. image/audio feature extraction methods, classification methods) to students. They research the subject, prepare a presentation and present it after my corrections. These presentations are also shared via our learning management system with all course participants. This presentation is counted as midterm exam and the second phase of the course is to improve a baseline system I preformulate for the students, on whatever affective computing or paralinguistic subject they choose. Students are expected to improve/develop at least one stage of the pipeline and carry out method/model optimization respecting the principle of parsimony. The optimal prototype developed in Project I is

implemented as an end-to-end recognition system in Project II course, again the medium (may it be desktop, mobile or web application) is chosen by the student.

A summary of student evaluations with the number of students taking the respective Bachelor's course, the number of students participating in the evaluation and the average scores (over 5) for the lecturer and the course itself is given in App.02. Hereby, I would like to reflect on some statistics provided therein. First and foremost, barring the graduation thesis supervision courses (Project I and II) the number of students enrolled in my courses ranged from 11 (senior selective course) to 173 (second year mandatory course). For example, the number of students enrolled in my courses in the first semester I served as an assistant professor (Fall 2017) add up to 496 (formal + evening school) apart from the 17 Bachelor's graduation thesis student supervision. Even though this was physically and cognitively a very high load for a first semester as an assistant professor, I was able to receive outstanding evaluations (all higher than or equal to 4 for *Teacher* and on average higher than 4 for *Course*). I would like to point your attention to the high percentage of the students providing input. Another point I would like mention is the increase in average evaluation scores for the machine learning course from ~ 3.10 to ~ 4.10 , after a change in the program I introduced to provide prerequisite knowledge in high-level scripting and programming for numeric analysis. Another observation is the reduction of the number of enrolled students in my courses. Here there were two reasons: 1) For the mandatory Numerical Analysis courses, students suffered from not mastering the subject using the approach from the former lecturer. Thus, the number of students have accumulated over years totaling 344 in Numerical Analysis the year I lectured it. This was reduced to (with newcomers and failing students) to 187 the following year. I consider this reduction an achievement for the course and the program. The second reason is that, after learning the course objectives and the prerequisites of my courses as well as my principled grading (not tolerant solely because they are senior students), only the students who felt themselves well-equipped opted for my selective courses and/or working under my supervision for their graduation theses.

In summary, I have gained considerable teaching experiences before coming to UU, encompassing different aspects such as course design, lecturing large student groups, supervising group (graduation) projects and individual students, introducing new courses / modifying curriculum in existing courses to fill the prerequisite gap in machine learning courses.

1.4 Notes on the BKO Plan

After consultation with the former BKO chair (dr. Gerard Tel), the initial intention was to complete the process in one and half years without taking BKO track courses. The suggestion was to have more teaching experience in Dutch higher education system and improve teaching skills accordingly. However, due to education management related reasons that will be mentioned later, it was not possible to teach a large scale undergraduate course a second time at UU during the BKO process. The director of education (dr. Wolfgang Huerst), who is informed on the issue, suggested to focus on diversity of courses in teaching. So far, I have lectured two different Bachelor's and two different Master's courses during the BKO process. My supervisor have advised me to design (and have respective experience with) a new Master's course in my research area. Due to staffing related reasons, it was not possible to open an 'Affective Computing' course (left for near future), however I have co-designed and co-lectured a new course (Human Centered Machine Learning) with dr. Dong Nguyen, taking a part (Explainable AI/ML) in my research field. In my view, the documents supplied in the portfolio contents and the appendices related to HCML course (e.g., Syllabus, Caracal reviews and respective response, exam examples) showcase the professional, organizational, didactic and content-related qualities I possess and gained through the BKOW process. At the beginning, the following strengths and weaknesses were self-noted by the BKO candidate.

Strengths:

- Strong commitment and enthusiasm to learn (research) and communicate (teach/publish) knowledge
- Interest and experience in combining research and teaching (e.g., in Master theses)

- Pedagogy and instructional design background from Bachelor's program
- Experience in teaching in large classes to students having diverse backgrounds
- Experience in designing Master's and re-designing Bachelor's courses and teaching them

Points for improvement (at the beginning of the BKOW):

- Teaching (in)experience in a Dutch institution
- Sensitivity in evaluating theses / assignments that leads to extensive time allocation
- Dense and complex explanation of concepts in response to questions

Regarding the first point, I consider two years of teaching at UU provided me sufficient experience. The second point was a major cause of timing issues but is improving in time. For the third, I do prepare myself to hold my enthusiasm in providing details and give shorter answers. In AI terminology, I give 'Depth First Search' style coverage of concepts, which is proven to be sub-optimal. Instead, I am shifting to 'Iterative Deepening Search' (in the personal development literature it is also referred as 'Pyramid Principle'), which is theoretically optimal and easier to follow by the listener. Future goals include participating in the transformation of student course evaluations to fairer and more constructive means, while ensuring teaching quality.

2 Teaching Philosophy, Biography and Challenges

This part gives an overview about the teaching tasks that I was involved after and before joining Utrecht university, with a particular focus on the tasks that took place during the BKOW track as a reflection of the former is already provided in the former section.

2.1 Teaching Philosophy

One of my favorite teachers used to say "A teacher is three things: a service person – like a doctor who cures the students by correcting their misconceptions, a researcher who learns and updates himself/herself and an engineer who designs the learning environment." Even though these were meant for high school teachers, they apply for university professors with a difference that the responsibility of the professor is not limited to his/her students, but also expands to the society, and even to the whole of humanity in terms of revealing the truth and correcting misconceptions.

I value Benjamin Samuel Bloom's theory of "Mastery Learning", where the three pillars of success are cognitive entry behaviors (pre-requisites), affective entry characteristics (attitude towards the course, teacher and the school) and corrective feedback. The theory suggests a well-structured method of teaching: starting from teachable, learnable, measurable objectives, to forming a dependency graph of these objectives. The hierarchically organized objectives are further grouped under "knowledge", "comprehension", "application", "analysis" and "synthesis" categories, where the first two are referred to as lower mental processes and the rest are higher mental processes. My personal experiences have taught me that this theory is excellent for achieving objectives for lower mental processes plus application, however it is too restrictive for analysis and synthesis. Thus, it can be used in the first stages of a course or first two years of college education with close to perfect success. However, as the student excels in basic knowledge, comprehension and application skills, another, more flexible approach is needed to foster creativity, which is central in analysis and synthesis skills. Note that the latter are integral part of post-graduate teaching and research.

My teaching philosophy is based on a hybrid-model of mastery-learning and constructivist-cognitive approach. While teaching the basics (facts and application), mastery learning may well be used, for all levels, educational pioneer Lev Vygotsky's constructivist approach can be employed. Different from Piaget, Vygotsky sees the socio-cultural environment as an influential factor in education and argues that learning takes place in "the zone of proximal development", where what a student/child has already learned/experienced meets new knowledge to construct a new form of understanding. Vygotsky underlines the importance of social (peer or parental) support with a focus on "scaffolding". Scaffolding can be simply defined as supporting the learner with gradually decreased amount as the learner masters the knowledge or skill. In my senior selective courses and my supervision of

graduation and Master's theses, I follow the scaffolding strategy. This strategy has proven to be very effective, however it requires high amount of time and energy dedicated by the instructor/supervisor, as the supervisor needs to design a "scaffold" in the form of a "working system that can be improved by struggling/experimenting", during which the student learns. Before experimenting the baseline system for a better prototype, the students are required to learn the theoretical details of each module/method used in the pipeline (e.g. for an automatic emotion recognition system the pipeline involves feature extraction, representation and classification methods). For undergrad students, this stage requires studying relevant papers and book chapters to prepare a presentation. For graduate students who have experience on the theoretical part, coding the methods in a high-level language such as MATLAB or Python is given as homework.

Corrective feedback (common in both Bloom and Vygotsky) is given at all levels. As can be seen in the portfolio contents (particularly documents 18 and 19), I provide very dense feedback (at all levels) for all intermediate as well as final deliverables such as assignments and theses. During the initial stages of the graduate / undergraduate thesis work, I meet the students more often (every week) to get him/her familiar with the basic concepts, direct him/her to relevant tools/literature and or provide a benchmark system (scaffold). Later, I slowly try to go into the background to let the student have more liberty and independence in the work, while continuing to give dense feedback to all outputs.

2.2 Courses Lectured

At Utrecht University :

All courses listed below were lectured during BKO process at UU (details in 02).

- I. Intelligent Systems (Spring 2020, co-lectured with Natasha Alechina and Dragan Doder)
- II. Scientific Perspectives on Game and Media Technology (MSc - Fall 2020 & 2021, co-lectured and coordinated with Marc van Kreveld)
- III. Human-Centered Machine Learning (MSc, Spring 2021, designed and coordinated with Dong Nguyen)
- IV. Artificial Intelligence (Fall 2020, co-lectured and coordinated with Silja Renooij)
- V. Informatica Software Project Supervision (Spring and Fall 2020, Fall 2021)

At Namık Kemal University / Turkey

- VI. Multimodal Signal Processing with MATLAB (MSc, Fall 2018 – self designed, see App.03)
- VII. Pattern Recognition for Behavior Analysis (MSc, Spring 2019 – self designed, see App.04)
- VIII. Machine Learning (Senior selective course, Spring 2018-2019 – redesigned)
- IX. Numerical Computation Programs (Senior selective course, Fall 2018)
- X. Introduction to Computing (via MATLAB/Octave, Fall 2016-2017)
- XI. Numerical Analysis (Fall 2017-2018)
- XII. Discrete Mathematics (Spring 2018-2019)
- XIII. Introduction to Information Technologies (Fall 2017)
- XIV. Project I and II (senior project courses: a total of 50 students in 4 semesters Fall 2017-2018 and Spring 2018-2019)

2.3 Courses Assisted during and after PhD

- I. Speech Processing (Boğaziçi University - Graduate)
- II. Computer Analysis of Human Behavior (Boğaziçi University - Graduate)
- III. Operating Systems (Boğaziçi University & Namık Kemal University)
- IV. Introduction to Computing / Computer Engineering (Boğaziçi University & NKU)
- V. Introduction to Database Systems (Boğaziçi University & Namık Kemal University)
- VI. Database Systems (Boğaziçi University)
- VII. Artificial Intelligence (Namık Kemal University)
- VIII. System Analysis and Design (Namık Kemal University)
- IX. Computer Networks (Namık Kemal University)
- X. Web Design and Programming (Namık Kemal University)

2.4 PhD Supervision

Gizem Soğancıoğlu (April 2020 – cont): Explainable Affective Computing for Mental Healthcare

- Academic achievements so far include two papers accepted / published in leading conferences first authored by Gizem Sogancioglu (one of which won Elderly Emotion Challenge @INTERSPEECH ComParE 2020); a conference presentation with jointly a supervised Master's student (Amber Norder).

2.5 Undergraduate / Graduate Student Supervision

Master's Student Supervision At Utrecht University

- I. **Dani Krebbers** (November 2021 – ongoing), Thesis title: Bimodal Native Language Recognition from L2
- II. **Floris van Steijn** (October 2021 – ongoing), Thesis title: Explainable bimodal depression prediction
- III. **Casper de Haas** (February 2021 – November 2021), Thesis title: Usability Study of an Explainable Machine Learning Risk Model for Predicting Illegal Shipbreaking.
- IV. **Wentao Hu** (December 2020 – August 2021), Thesis Title: Explaining and Debiasing Video based Interview Recommendation and Personality Impression Predictions.
- V. **Amber Norder** (November 2020 – July 2021), Thesis Title: Named Entity Recognition and Coreference Resolution Approaches using BERT-based Models for Dutch Police Records
 - Note: A conference paper presented at Computational Linguistics in the Netherlands (CLIN) conference and an extended version is invited and submitted to CLIN journal.
- VI. **Thomas Borger** (October 2020 – May 2021 – co-supervised with Pablo Moistero), Thesis Title: Federated Learning for Aggression Incident Prediction in a Cross-Institutional Psychiatric Setting
 - Note: A paper (jointly with all supervisors) is submitted to a high impact journal, received a revision request and the revised version is about to be resubmitted.
- VII. **Shpat Cheliku** (Feb. 2020- September 2020), Thesis Title: Applying AI-Based Anomaly Detection Techniques to Identify Waste Dischargers At The North Sea.
- VIII. **Maurits Politiek** (Oct. 2019- July 2020), Thesis Title: Demystifying black-box targeting: Interpretable machine learning in commercial website visitor analysis.

Master's Student Supervision at Bogazici University

- I. **Pinar Baki** (Aug. 2019-Jan. 2021- co-supervised with Dr. Albert Ali Salah)
Thesis Title: A Multimodal Approach for Automatic Mania Assessment in Bipolar Disorder
 - Note: A conference paper is published and a journal manuscript is under review.
- II. **Nihan Karslıoğlu İman** (June 2018-June 2019 - co-supervised with Dr. Albert Ali Salah)
Thesis title: Emotional impact of movies
 - Note: A conference paper is published in a local IEEE conference in Turkey.
- III. **Furkan Gürpınar** (Jan. 2015 - June 2017 - co-supervised with Dr. Albert Ali Salah)
Thesis Title: Video and Image Based Face Analysis with Extreme Learning Machines.
 - Note: A strong publication record for a MSc study: 10 scientific papers in peer reviewed venues (including two high-impact journal papers, a book chapter) and four multimodal affect recognition challenge awards at competitions organized at prestigious international conferences.
- IV. **Şefika Yüzsever** (Jan. 2014-Jan 2015- co-supervised with Prof. dr. Fikret Gürgen)
Thesis Title: Mutual Information Based Feature Selection for Acoustic Autism Diagnosis
- V. **Tuğçe Özkaptan** (Sep 2013-Aug 2014- co-supervised with Prof. dr. Fikret Gürgen)
Thesis title: Random Discriminative Projection-Based Feature Selection for Computational Paralinguistics
 - Note: Thesis study resulted in a journal (Signal Processing Letters) publication and a conference (INTERSPEECH) publication that won a ComParE'14 challenge award.

Master's Student Co-Supervision At Utrecht University

- I. **Christian Moll** (January 2022 – ongoing – supervisor: Hanna Hauptmann) Thesis title: Explainable automated food waste monitoring
- II. **Berk Çalık** (September 2021- ongoing - supervisor: Marijn Schraagen) Thesis title: A Multimodal approach: Acoustic-Linguistic Modelling for abstractive podcast summarization
- III. **Kasper Noteboom** (September 2021 - ongoing - supervisor Dirk Thierens), Thesis title: Selectionist Random Vector Functional Link Networks.
- IV. **Jorijn Enterman** (December 2020 - ongoing - supervisor: Marijn Schraagen), Thesis title: Building a Dutch Digital Scribe: Dataset Creation and Relation Extraction
- V. **Daniel Hamandouche** (June 2021 – ongoing – supervisor Alexei Nazarov), Thesis title: Speech detection for large noisy data files.
- VI. **Begüm Hattatoğlu** (Feb 2021 – July 2021 – supervisor Hakim Qahtan), Thesis Title: Fairness in Machine Learning: Ensuring Fairness in Datasets for Classification Problems.
- VII. **Rafael Fortunato** (September 2020 – April 2021 – supervisor Ronald Poppe), Thesis title: A Novel Approach on the Fine-Grained Task of Classifying Firearm Brands and Subtypes
- VIII. **Casper Laughs** (Oct 2019 – August 2020 - co-supervised with Anja Volk) Thesis Title: Creating a Speech- and Music Emotion Recognition System for Mixed Source Audio.
 - Note: A paper (jointly with all supervisors) is published at ICMI'20 as Late Breaking Results paper.

Bachelor's Student Supervision At Utrecht University

- I. **Aeilynn Kleian** (KI - ongoing): Analyzing the effect of continuous, human-in-the-loop learning for acoustic-linguistic mood recognition
- II. **Kaya ter Burg** (KI - 2021): Explaining DNN Based Facial Expression Classifications
- III. **Yannick Dogterom** (KI - 2021): Stance Detection and Public Opinion Analysis on Twitter Content
- IV. **Tobias Cadee** (KI –2020): Classifying Elderly Emotion
- V. **Bob Breemhaar** (INKU - 2020): The Modeling of job interview with the use of joint mood and apparent personality analysis
- VI. **Thomas Mol** (INKU –2020): Annotating, analyzing and modeling of a video based personality trait corpus for mood primitives and likeability

2.6 Contribution to Educational Management

At Utrecht University

- **Chair Applied Data Science OAC (Since Feb. 2021, for 3 years):** As part of my chair role, I also serve in GSNS Curriculum Committee (GSNS OC) and participate in Program Council meetings on behalf of OAC. As OAC, so far we have reviewed the Caracal evaluations of the ADS program courses for the two semesters of 2020 – 2021 educational period and also have contributed to discussion on OER & ADS OER Annex. Two documents are included regarding this duty:
 - App.05: Minutes from the ADS OAC meeting (prepared by myself as chair), where we discussed the Caracal evaluations from 2020- 2021 Semester II. This document also includes an evaluation summary prepared for GSNS Curriculum Committee.
 - App.06: A meeting is organized to provide feedback for the newly proposed 'Data Science' program in the process of internal (URO) certification among the OAC chairs of the Master's programs in the Informatica Department and the proposal owners (Yannis Velegrakis and Michael Behrisch). Since the GSNS CC chair Deb Panja was in another country, I was proposed to chair the meeting. Since it was my first experience to chair such a meeting, I requested a feedback from Gerjanne Heek who served as secretary during a meeting. App.06 contains the feedback, my response to Gerjanne and a final note about feedback from present OAC chairs.
- **Member of Informatica KI course track revision committee (December 2020- December 2021):** A committee chaired by Brian Logan was formed to revise the KI courses to minimize overlap and resolve learning goals & prerequisite gaps in the Computing Science curriculum (tasked by coordinator Lennart Herlaar, App.07 contains the respective assignment). We have prepared multiple options including a draft program of a new Machine Learning course tailored for Computing Science student's prerequisites and other

requirements (e.g. that starts from scratch and includes explainable ML). The option including the removal of the Artificial Intelligence (KI) course, spreading some of its content to Computational Intelligence (CI) and Intelligent Systems (IS) courses with minimal overlap among them and not opening a new ML course under Computational Science Bachelor but under KI Bachelor was adopted. The final version of the report is included in App.08. This report is compiled by the chair Brian Logan with inputs from the committee members (including me, Tomas Klos and Dirk Thierens).

- In one of the earlier intermediate version of the committee report, we also proposed to have a separate Machine Learning course for Computing Science Bachelor's students. I was tasked with the preparation of the course program. App.09 contains the respective course program draft prepared by me. While this plan was positively received, the program management preferred a common course for KI and Computing Science Bachelor's students due to logistics (staffing) related reasons.
- **Recruitment committee member for Interaction Technology and Human Computer Interaction positions:** I served in the selection committee for two UD+ positions, for which there were over 55 applicants.

At Namık Kemal University Computer Engineering Department

- Departmental Erasmus Coordinator (Fall 2017 – Fall 2019)
- Member of Bachelor's Graduation Committee (Fall 2015 – Fall 2019)
- Member of Master's Student Admission Committee (Fall 2018, Spring 2019)
- Member of Master's Program Proposal Preparation Committee (Fall 2017)
- Member of Summer Internship Committee (Fall 2015- Fall 2017)

2.7 Public Outreach

An important role of a university professor is the education of the public. This can mean several things, and include targeted groups at different levels. I briefly list some of my activities that should be considered as public outreach.

-Lectures in summer schools & invited public lectures: I have delivered three lectures in a summer school on Machine Learning (at ITMO University in St. Petersburg) which was open to all university students and interested people from academia and private sector. I have also offered two invited public lectures at SPIIRAS (St. Petersburg) and TU Munich. The lecture topics are listed in my CV.

Other lectures open to the public: I gave a lecture Affective Computing (in Turkish) at *GDG (Google Developer Group) Tekirdag* event held at my former institution (NKU) in Spring 2018.

- A mini presentation to 6-year old students (group 3) on my profession. As part of the theme 'Who I want to be?' at my son Aleksei's school the parents were invited to introduce their profession & what they do. The challenge was to present the concept of Machine Learning, AI and Emotion Computing 6-years old kids using max 3 words in a slide and in Dutch, where my level is B1. The presentation, which went hilarious, is included in App.10 (speech content is available in notes).

-News media coverage. My research was often featured in media channels, including UU news (<https://www.uu.nl/en/news/utrecht-researchers-win-two-out-of-three-grand-challenges-in-computational-paralinguistics>) and Russian ICT media collection due to my Russian collaborators (e.g. see [here in English](#) and [here in Russian](#))

-Workshop and conference organization. I have contributed to organization of several scientific conferences (International Society of Scientometrics and Informetrics Conference 2015, Speech and Computer Technology 2019 – both co-organized with my current supervisor Albert Ali Salah) held on the Bogazici University premises. In each case, students and staff of the university were allowed to freely attend these events. I have also organized a series of special sessions at a local IEEE conference in Turkey (SIU) and workshops, challenge sessions at international conferences such as ACM ICMI, ACM Multimedia and INTERSPEECH (see attached CV for details).

2.8 On Collaboration in Teaching

While in Turkey it is common to teach the whole course alone, at Utrecht University I have collaborated with other lecturers in all of my courses. However, I have collaborated with other teaching staff at all levels since 2010 – the year I started my PhD study. During and after my PhD (namely until I was assigned as assistant professor at NKU), I assisted programming-intense courses in TA teams. At Bogazici University (during my PhD), the Department of Computer Engineering had the task of lecturing Introduction to Computing to the whole faculty junior students. This required one third of the PhD candidates (Dutch AIOs) and over a dozen of student assistants to be dedicated for this task. This process was managed very well by the lecturer and the coordinator AIOs. I found student assistance (Senior fellow students from the same department) very beneficial in teaching programming and also motivating for the younger students. This scheme was not applied at NKU, where I served my compulsory duty. After completing my PhD, I wanted to introduce student assistance to my department at NKU. However, I could not convince my (then) head of department, who thought there is no legal foundation for this, although the faculty of engineering was hiring student TAs for other tasks.

At UU, I collaborated with Dragan Doder and Natasha Alechina for my first course, namely Intelligent Systems in Spring 2020, which was running when the first Corona lockdown was introduced. As I will detail later under 'Challenges' section, it was not an easy process to shift immediately to online education. Thanks to our close collaboration and lenient approach of our coordinator Natasha, we could handle the transition very smoothly. This is also reflected in Caracal evaluations of this course (given in portfolio content 09). As also listed in Section 2.1, I co-lectured and coordinated courses with Silja Renooij, Marc van Kreveld and Dong Nguyen. The course I co-lectured with Dong Nguyen was newly proposed and we have co-designed it from scratch. Therefore, we have collaborated at all levels, from course design to cross-checking of our slides and sharing a common document to draft the announcements and response to individual student requests. The first edition of this course was a success, as also reflected in Caracal evaluations. In the portfolio contents, I place an emphasis on this course as this is a new course we have designed and run, with full liberty and responsibility in the content and delivery. Portfolio contents 04 through 08 are included to provide respective information on this course design and particular items of collaboration.

The two AI related undergraduate courses I co-lectured, namely Intelligent Systems and *Kunstmatige Intelligentie* (Artificial Intelligence) had each 9 student teaching assistants to help with tutorials and grading of the assignments / projects. In the IS course, we were assigned one AIO, who helped preparing some of the programming assignments and respective solutions. This course had four programming assignments and four homeworks. The lecturers prepared the homework assignments and respective solutions and handed them in to the TAs. Together with the student TAs, we all supported the students over DomJudge (where they handed in their programming assignments in Prolog), MS Teams or email responding to their queries timely. At the beginning of the term, the students and the TAs were assigned to respective groups for offline tutorials (*werkcollege* and labs). This continued until the corona lockdown, when we moved to MS Teams where the students posed questions / asked for help in a ticketing type of a system (a TA would place a like to the question to take it on himself/herself). This worked very well and was appreciated by the students.

The KI course also had 9 student TAs but two AIOs. One of the AIOs was tasked with programming based projects (migrating the python 2.7 based programming assignment to python 3.6, among others) and the other AIO (who was a Native Dutch speaker) was tasked with *werkcolleges*, whose questions and answers were mostly prepared in Dutch prior to the start of the course. We have organized online meetings with all AIOs and TAs to inform them about their responsibilities and tentative schedule of the assignment grading. Due to Coronameasures and the restriction on the number of people in a classroom, it was not feasible to hold the tutorials / labs on campus. Thus, we went on an online solution by opening MS Teams channels separately for *werkcolleges* and projects. The ticketing system that worked well on the IS course was implemented here, too. The TAs were assigned to one of these channels on a rotation scheme and also considering the amount

of questions asked in the previous weeks in each channel. We generally received more questions per week for projects than for tutorials, while towards the exam weeks the frequency of questions for tutorials increased. Foreseeing this, we have dynamically reallocated TAs to handle these requests. In short, TAs were managed well and they did handle their tasks well in two courses.

2.9 Challenges in Teaching Experiences

As there is no perfect recipe for teaching, there may always be challenges to tackle in any program. Earlier in Section 1.3, I mentioned about the experiences and challenges at NKU and how I handled them. Here, I would like to focus on my experiences and the challenges I came across at UU.

One of the challenges was teaching a mixed class in terms of skills and background. This was the case with both AI related undergraduate courses I co-lectured, which were part of the agents track of the KI undergraduate program and thus were taken by both computing science and KI students. Originally, the KI course was intended for Computing Science Game Technology students, considering their prerequisites and background and was later included in the KI program. The problem here was that KI students had already seen (or would see later in Intelligent Systems and Computational Intelligence courses) some of the content presented in this course, while computing science students have not seen it. This required us to compromise from both sides: include material to meet the missing prerequisites for computing science students and include materials that would be beneficial for both computing science and KI students. Even so, the overlap of the contents across courses and some missing prerequisites would continue to be a problem. This was the reason to form a committee to rearrange the AI course curriculum, where I was a member of. The appendices include respective task definition (App.07 Task Description for Revision of Artificial Intelligence courses) and the final version of the committee report (App.08 Revising the AI Curriculum of the CS bachelor's program). Based on our proposal and considering a wide range of alternatives, the program management has decided to discontinue the KI course and open a new machine learning course to be taken by both KI and computing science students. The committee is about to finalize the work towards minimizing the overlap and the gaps in terms of learning objectives / prerequisites in the KI course series.

The other two challenges were teaching a course for the first time without sufficient time to prepare optimally and corona restrictions, respectively. I will first deal with the first challenge and the interaction between the two challenges, then continue with problems due to corona pandemic and its far-reaching effect on our lives and of course teaching process. I should frankly mention that despite the high per-week (and per semester) teaching load at my former institution and the fact that I had to lecture all courses alone, the cognitive load was still lower compared to my first time teaching of a course at UU. One reason is that, the students had 5-7 courses a semester each with lower weekly load for the teacher and the students, while at UU the teaching is dense (two 7.5 EC courses per block). This requires more course materials (homeworks, assignments) to be prepared and graded, in addition to the need for a close-to-perfect preparation for the lectures. When you start with a course, you invest a good deal of time / energy to review and update the lecture / course materials. This includes reading the course textbook, alternative resources and recent articles to prepare / update the lecture slides as well as preparing / updating the assignments, among others. Fortunately, I was assigned courses that were relevant to my research domain and partly overlapping with my former teaching experience. The first year, I took part in the Intelligent Systems course which was informed to me some time in block II. The former lecturer provided us all relevant materials, but they all were in Dutch. Back then my Dutch level was zero. For consistency in the course, it was wise to re-use/adapt the material from the former lecturer. It took time to translate the material, study the main text book (Artificial Intelligence a Modern Approach, which I was familiar with) and another book on Prolog (which I have never lectured) and other online materials for students to practice Prolog. I am happy to have received very positive comments from students about their Prolog learning experience as noted in the Caracal reviews (portfolio content 09 - Intelligent Systems course 2020 Caracal evaluation). However unfortunately, I could not continue teaching this course one more time as the former lecturer was back to take it over. I was assigned to the KI course, which I have coordinated and lectured with Silja Renooij with great pleasure, even

though some (aforementioned) issues have emerged. As mentioned in the former paragraph, due to program-wise issues, this course had to be discontinued effective from 2021-2022 period. Thus, at the very beginning of my teaching career at UU, I had to teach two courses for the first and last time. Including the corona lockdown and the need to spend more time on preparing teaching materials, responding to students more often etc., I wish I could continue teaching one of these courses and have the opportunity to improve my teaching over time.

The last but the most impactful challenge was teaching during corona times. After a recent research on student wellbeing, we have some statistics on how it influenced university students. To help the students socialize and meet each other physically, we organized social events on campus for two Master's courses (namely, Scientific Perspectives on GMT and Human Centered Machine Learning) that were delivered online in 2020-2021 educational period. These were very positively received by the students. Unfortunately, there were observed depression related symptoms in my Master's and software project students. For Master's project students, I increased the frequency of meetings to provide feedback and support more often. For the software project students, I wanted to make sure that they can meet their required contribution to the project without a burnout.

Lastly, I can confidently say that all of these challenges have contributed to my maturity as a university lecturer and also provided valuable experiences to teach in a Dutch university. While I would have loved to teach IS and/or KI courses the second time, indeed not being able to teach them opened a way to teach other courses, take new teaching related responsibilities and diversify my teaching experiences. Teaching during corona was a unique experience, and to meet the increasing expectations of the students from online learning, I am planning to collaborate with Educate-IT more in order to employ new educational technologies they support.

3 An Overview of BKO Indicators and Portfolio Documents

In order to facilitate the task of the evaluators, I list here the BKO indicators (in Dutch, version 31-10-2018), and the documents in my Dossier that relate to these indicators, in addition to the information contained in this portfolio introduction.

Professionele Kwaliteiten	Related Documents (in addition to the Motivation Letter)
Kritiek van peers	<p>Among all sources of feedback, I found the feedback from peers the most constructive and to the point. Peer feedback helped me a great deal in improving my teaching quality and expand my vision in teaching at UU. Four documents are included:</p> <ul style="list-style-type: none"> • 10 BKO Observation for Kunstmatige Intelligentie by Silja Renooij (with post-discussion) • 11 BKO Observation for INFOMSCIP by Marc van Kreveld (with post-discussion) • 12 BKO Observation for Kunstmatige Intelligentie by Almila Akdag • App.06 URO Certification Chairing Feedback from Gerjanne Heek and the response
Kritiek van studenten	<p>I am regularly incorporating feedback from students in order to improve my teaching. Seven documents are included:</p> <ul style="list-style-type: none"> • 06 HCML course (2021) Caracal evaluation • 07 HCML course (2021) Caracal response • 08 IS course (2020) Caracal evaluation • 09 IS course (2020) Caracal response • 20 BSc-MSc-Thesis Supervision Feedback from Students and Reflection over • 21 INFOSP (2020 Spring) Software Project Supervision Feedback and Reflection over

	<ul style="list-style-type: none"> • 22 INFOSP (2021 Fall) Software Project Supervision Feedback <p>In portfolio documents 20 and 21, student feedback and responses to such feedback are collected. In each case of a course, the feedback was shared with the students at the end of the course. The implementation of the feedback from my first INFOSP experience in Spring 2020 can be observed in the student feedback for my third INFOSP supervision in Fall 2021, provided in portfolio document 22.</p>
Werkwijze aanpassen	<p>Two documents are included to exemplify this aspect:</p> <ul style="list-style-type: none"> • 07 HCML course (2021) Caracal response • 08 IS course (2020) Caracal response <p>These indicate the changes I have planned and made in the course material based on student feedback. I also include my contribution to changes in the BSc programs at NKU and UU in Sections 1.3 and 2.6.</p>
Helpt collega's	<p>In all institutions I worked, I was keen on helping colleagues. For example, at UU, I always responded positively for MSc thesis co-supervision requests from colleagues and co-lecturing requests given on a short notice, even though some turned out to be very challenging as mentioned in Section 2.9.</p> <p>Five documents are included for this criterion:</p> <ul style="list-style-type: none"> • 15 Observation for Algorithms course (lecturer Alison Liu) • 16 Observation for Sound and Music Technology course (lecturer Anja Volk) • 17 Observation for Cognition and Emotion course (lecturer Albert Ali Salah) • App.08 Revising the AI Curriculum of the CS bachelor's program (04-03-2021) • App.09 Machine Learning Course Proposal for Computing Science Bachelor (13-02-2021) <p>The first three documents are feedback on lectures given at courses taught by colleagues. App.08 is a final report of the committee formed for Revising the AI Curriculum of the CS bachelor's program and App.09 is an intermediate output (ML course plan proposal) I prepared.</p>
Publieksactiviteiten	<p>In addition to Section 2.7, one document is included that lists these activities, including invited lectures and organized events:</p> <ul style="list-style-type: none"> • 01 Short CV
Zelfreflectie	<p>A very important part of teaching is constant improvement. In addition to reflection provided in Sections 1.3, 2.8 and 2.9, seven documents are provided to illustrate self-reflection:</p> <ul style="list-style-type: none"> • 02 Teaching Biography • 07 HCML course (2021) Caracal response • 09 IS course (2020) Caracal response • 10 BKO Observation for Kunstmatige Intelligentie by Silja Renooij (with post-discussion)

	<ul style="list-style-type: none"> • 11 BKO Observation for INFOMSCIP by Marc van Kreveld (with post-discussion) • 20 BSc-MSc-Thesis Supervision Feedback from Students and Reflection over Feedback • 21 INFOSP (2020 Spring) Software Project Supervision Feedback and Reflection over Feedback
Taalwaardigheden	<p>I have pursued my BSc, MSc and PhD studies in universities and programmes that offered 100% English education, have written and defended my theses in English. I have published over 65 papers in international conferences and journals in English. In 2011, based on my national English exam result (90/100), I was sent to Malta for Advanced English Training. After joining UU, I have completed A2 and B1 level Dutch at Babel and followed 'Receptive Nederlands voor Medezeggenschappers' course at UU towards B2 level. Two documents are included in appendix:</p> <ul style="list-style-type: none"> • App.12 Heysem Kaya English Certificate C1 • App.22 Heysem Kaya Dutch Certificate B1
Organisatorische Kwaliteiten	
Werken in team	<p>Section 2.8 in this document details collaboration in teaching, particularly during my BKO process. Furthermore, I have collaborated and published with over 65 people in my career, and visited labs abroad on medium term (2-3 months) scientific missions. One document is provided to detail these:</p> <ul style="list-style-type: none"> • 01 Short CV
Overleggen	<p>To illustrate reflection and discussion with peers, five documents are provided:</p> <ul style="list-style-type: none"> • 07 HCML course (2021) Caracal response • 09 IS course (2020) Caracal response • 10 BKO Observation for Kunstmatige Intelligentie by Silja Renooij (with post-discussion) • 11 BKO Observation for INFOMSCIP by Marc van Kreveld (with post-discussion) • App.06 URO Certification Chairing Feedback from Gerjanne Heek and the response
Website bijhouden	<p>The following document contains a web link to my up to date website, including the list of almost all publications, descriptions of recent scientific activities, and their links:</p> <ul style="list-style-type: none"> • 01 Short CV (contains link to up to date website)
Communicatie	<p>I devote significant effort to communication, both for scientific community (e.g. sharing preprints of publications and code), and for the students to provide them both comprehensive and timely feedback. Student communication during and after courses/supervision show my communication approach. Five documents are provided to illustrate this:</p> <ul style="list-style-type: none"> • 01 Short CV; • 05 HCML course (2021) Announcements • 07 HCML course (2021) Caracal response • 09 IS course (2020) Caracal response • 20 BSc-MSc-Thesis Supervision Feedback from Students and Reflection over Feedback

Roosteren	<p>Syllabus/course manual of the courses lectured, and student evaluations contain information about this:</p> <ul style="list-style-type: none"> • 03 HCML course Syllabus • 06 HCML course (2021) Caracal evaluation • 08 IS course (2020) Caracal evaluation • 23 Course Manual for IS (2020)
Tijdig nakijken	<p>No matter the size of the class, I have always paid attention to timely grading. Student evaluations contain evaluation of this:</p> <ul style="list-style-type: none"> • 09 IS course (2020) Caracal evaluation • 20 BSc-MSc-Thesis Supervision Feedback from Students and Reflection over Feedback
Eindbeoordelingen	<p>As co-lecturers, we always made clear from the beginning how the final grade will be calculated and how individual assessment components will be handled. A number of materials are presented to illustrate different aspects of course design and teaching conductance:</p> <ul style="list-style-type: none"> • 03 HCML course Syllabus • 06 HCML course (2021) Caracal evaluation • 08 IS course (2020) Caracal evaluation • App.13 Sample feedback for HCML final project
Vakinhoudelijke Kwaliteiten	
Voltooide opleiding	<p>I have completed a Bachelor's degree in Computer Education and Educational Technology that equipped me with pedagogic skills to work as a teacher of computer. Respective explanation and reflection for this degree is given in Section 1.2 above, while the full list of the courses I followed is shown in:</p> <ul style="list-style-type: none"> • App.01 BSc Transcript
Promotie	<p>I have graduated MS students, had about 4.5 years of work experience in ICT industry, provided consultancy services to AI based projects. For each of these points, the following document includes sections to list my activities and contributions:</p> <ul style="list-style-type: none"> • 01 Short CV
Bijdrage aan vak	
Werkervaring industrie	
Ontwikkelingen verwerken	
Professionele Kwaliteiten	Additional Related Documents
Didactisch: Ontwerpen van onderwijs	
Boek uitkiezen	<p>In addition to notes in Section 1.2, the following documents are provided, listing my course design activities. I have (re)designed several undergrad and graduate courses:</p> <ul style="list-style-type: none"> • 01 Short CV • 02 Teaching Biography for UU courses • App.09 Machine Learning Course Proposal for Computing Science Bachelor (not implemented)
Boek/dictaat schrijven	
Lessen bedenken (Bachelors)	
Lessen bedenken (Masters)	<p>I have designed several courses at graduate level, both at NKU, and Utrecht University. The following documents are provided to document graduate course design and teaching:</p> <ul style="list-style-type: none"> • 01 Short CV • 02 Teaching Biography for UU courses • App.03 and App.04 Teaching plan for two MSc courses • 04 HCML course Syllabus

Praktikum opstellen	<p>In all courses I lectured, I either prepared new assignments or re-designed the former assignments. Two documents are provided to illustrate this aspect:</p> <ul style="list-style-type: none"> • App.19 IS Programming Assignment 1 with answers • App.20 IS 2020 HW3 Description
Projectopdracht verzinnen	<p>Almost all of my courses involve projects and coding. Details are included in:</p> <ul style="list-style-type: none"> • 02 Teaching Biography for UU courses • 04 HCML course Syllabus • App.21 Kunstmatige Intelligentie Project C Description
Onderwijsvernieuwen	<p>I update my course material regularly, based on feedback I receive. Furthermore, I have a Bachelor's degree in Computer Education and Educational technology. Related documents:</p> <ul style="list-style-type: none"> • 02 Teaching Biography for UU courses • 07, 09 Responses to Caracal evaluations • App.01 BSc Transcript
Didactisch: Geven van Onderwijs	
Enthousiasme	<p>My CV includes the challenge awards won by me (or teams lead by me) in my research field as well as the voluntary activities to illustrate enthusiasm, such as guest lectures and workshops. Moreover, the enthusiasm during my teaching and thesis supervision are also reflected in student feedback:</p> <ul style="list-style-type: none"> • 01 Short CV • 20 BSc-MSc-Thesis Supervision Feedback from Students and Reflection over
Duidelijk uitleggen	<p>I have (co-)prepared materials for our students and TAs to peruse for evaluation of course tasks. Furthermore, I have obtained peer feedback on clarity:</p> <ul style="list-style-type: none"> • 04 HCML course Syllabus • 10 BKO Observation for Kunstmatige Intelligentie by Silja Renooij (with post-discussion) • 11 BKO Observation for INFOMSCIP by Marc van Kreveld (with post-discussion) • 12 BKO Observation for Kunstmatige Intelligentie by Almila Akdag • App.17 Grading Guidelines for AI course Project C (for TAs)
Hoorcollege Bachelor	<p>The practical aspects of each course that I taught at NKU are given in Section 1.3. and ones at UU are detailed in '02 Teaching Biography for UU courses'. Exemplary lecture slides for a Master's course we designed at UU are available in:</p> <ul style="list-style-type: none"> • 13 Slides for HCML (2021) lecture on Model Agnostic Interpretability Methods • 14 Slides for HCML (2021) lecture on Neural Network Interpretability
Hoorcollege Master	
Werkcollege	
Praktikum	
Bestaand materiaal	
Bedacht materiaal	<p>I have included sample material from several courses to illustrate the teaching material I have designed/prepared:</p> <ul style="list-style-type: none"> • 02 Teaching Biography for UU courses • 13 Slides for HCML (2021) lecture on Model Agnostic Interpretability Methods;

	<ul style="list-style-type: none"> • 14 Slides for HCML (2021) lecture on Neural Network Interpretability; • App.03 Course Plan - Multimodal Signal Processing with MATLAB • App.04 Course Plan - Pattern Recognition for Behavior Analysis • App.20 Intelligent Systems 2020 HW3 Description • App.21 Kunstmatige Intelligentie Project C Description
Bachelorscriptie	
Masterscriptie	The list is provided in Section 2.5 above and in 01 Short CV.
Didactisch: Toetsen	
Toetsmatrijs voor vak	<p>This is provided for two MSc courses that I have designed from scratch at NKU and one course I have co-designed at UU:</p> <ul style="list-style-type: none"> • App.03 Course Plan - Multimodal Signal Processing with MATLAB • App.04 Course Plan - Pattern Recognition for Behavior Analysis • 03 HCML course Syllabus • 04 HCML course Evaluation matrix in relation to AI MSc program
Tentamen opstellen	<p>Assessment and Evaluation of Instruction was one of the main courses I followed in my BSc degree. At university level, we care that the exam fairly covers all topics lectured, measures the learning goals set for the course and the question difficulty is balanced considering the exam duration. I provided materials on exams from two different courses:</p> <ul style="list-style-type: none"> • App.14 HCML midterm exam • App.18 Kunstmatige Intelligentie midterm exam
Beoordelingsmodel praktikum	<p>Syllabus of the co-designed HCML course and guidelines for a project (co-prepared with Gizem Sogancioglu) are provided:</p> <ul style="list-style-type: none"> • 04 HCML course Syllabus • App.17 Grading Guidelines for AI course Project C
Presentatie beoordelen	<p>Feedback on paper presentation in HCML course is given:</p> <ul style="list-style-type: none"> • App.16 Sample Feedback for HCML Paper Presentation
RUBRICS opgesteld	<p>Rubrics provided for a designed course:</p> <ul style="list-style-type: none"> • 03 HCML course Syllabus • 04 HCML course Evaluation matrix in relation to AI MSc program
Paper beoordeeld	<p>I take my time for detailed evaluation of assignments and theses to provide very comprehensive feedback. Exemplar evaluations and feedback are provided in:</p> <ul style="list-style-type: none"> • 18 Annotated feedback for thesis 'Explaining and Debiasing Video based Personality Impression' (anonymized) • 19 Annotated feedback for INFOMSCIP assignment 5 on statistics (anonymized)
Reparatietoetsing	<p>All courses I taught had make-up exams, as this was mandatory also at NKU. One example is provided:</p> <ul style="list-style-type: none"> • App.15 Human Centered Machine Learning midterm retake exam

3.1 Portfolio Contents

All documents are dated December 2021, unless explicitly noted.

- 01-Short CV (recent publications available, full list of publications is available on my Google Scholar profile: <https://scholar.google.com/citations?user=mPI3SpkAAAAJ&hl=en>)
- 02-Teaching Biography for UU courses lectured in BKO Process
- 03-Human Centered Machine Learning course (2021) Syllabus
- 04-Human Centered Machine Learning course Evaluation matrix in relation to AI MSc program
- 05-Human Centered Machine Learning course (2021) Announcements
- 06-Human Centered Machine Learning course (2021) Caracal evaluation
- 07-Human Centered Machine Learning course (2021) Caracal response
- 08-Intelligent Systems course (2020) Caracal evaluation
- 09-Intelligent Systems course (2020) Caracal response
- 10-BKO Observation for Kunstmatige Intelligentie by Silja Renooij (with post-discussion)
- 11-BKO Observation for INFOMSCIP by Marc van Kreveld (with post-discussion)
- 12-BKO Observation for Kunstmatige Intelligentie by Almila Akdag
- 13-Slides for HCML (2021) lecture on Model Agnostic Interpretability Methods
- 14-Slides for HCML (2021) lecture on Neural Network Interpretability
- 15-Observation for Algorithms course (lecturer Alison Liu)
- 16-Observation for Sound and Music Technology course (lecturer Anja Volk)
- 17-Observation for Cognition and Emotion course (lecturer Albert Ali Salah)
- 18-Annotated feedback for thesis 'Explaining and Debiasing Video based Personality Impression' (anonymized)
- 19-Annotated feedback for INFOMSCIP assignment 5 on statistics (anonymized)
- 20-BSc-MSc-Thesis Supervision Feedback from Students and Reflection over Feedback
- 21-INFOSP (2020 Spring) Software Project Supervision Feedback and Reflection over Feedback
- 22-INFOSP (2021 Fall) Software Project Supervision Feedback
- 23-Course Manual for Intelligent Systems (2020)

3.2 Appendices (respective dates are given in parentheses) :

- App.01 BSc Transcript (25-07-2007)
- App.02 Course Evaluations at NKU (13-02-2020)
- App.03 Course Plan - Multimodal Signal Processing with MATLAB (06-11-2017)
- App.04 Course Plan - Pattern Recognition for Behavior Analysis (06-11-2017)
- App.05 Minutes ADS-OAC (20-10-2021)
- App.06 URO Certification Charing Feedback from Gerjanne Heek and the response (10-11-2021)
- App.07 Task Description for Revision of Artificial Intelligence courses (14-12-2020)
- App.08 Revising the AI Curriculum of the CS bachelor's program (04-03-2021)
- App.09 Machine Learning Course Proposal for Computing Science Bachelor (13-02-2021)
- App.10 Presentation of my profession to Groep 3 students (12-10-2021)
- App.11 Schedule for Kunstmatige Intelligentie course (10-11-2020)
- App.12 Heysem KAYA Advanced (C1) English Training Certificate IELTS Malta (10-10-2011)
- App.13 Sample feedback for Human Centered Machine Learning final project
- App.14 Human Centered Machine Learning midterm exam (10-06-2021)
- App.15 Human Centered Machine Learning midterm retake exam (13-07-2021)
- App.16 Sample Feedback for Human Centered Machine Learning Paper Presentation (24-06-2021)
- App.17 Grading Guidelines for AI course Project C (15-12-2020)
- App.18 Kunstmatige Intelligentie midterm exam (11-12-2020)
- App.19 Intelligent Systems Programming Assignment 1 with answers (05-03-2020)
- App.20 Intelligent Systems 2020 HW3 Description (26-03-2020)
- App.21 Kunstmatige Intelligentie Project C Description (18-12-2020)
- App.22 Heysem Kaya Intermediate (B1) Dutch Training Certificate Babel (20-01-2021)