

PhD Project Description

School/Department:	Department of Maxillofacial Surgery, Special Dental Care & Orthodontics Erasmus MC
Supervisor information:	<ul style="list-style-type: none"> • Prof dr Eppo Wolvius – Head of Department Prof dr. Fernando Rivadeneira • Email: e.wolvius@erasmusmc.nl f.rivadeneira@erasmusmc.nl • Website: https://www.ipc.nl/specialties/oral-maxillofacial-surgery-special-dental-care/ • Grants: <ul style="list-style-type: none"> - European Reference Network on Cranial diseases https://ern-cranio.eu... - European Commission Cost Action: GENomics of MusculoSkeletal traits TranslatiOnal Network (CA86139) https://www.cost.eu/actions/CA18139/ - European Commission MSC-ITN Tissue engineering in osteoarthritis and bone disease https://www.carbonresearch.eu. • Most important publications: <ol style="list-style-type: none"> 1. Vucic, S., R. W. Drost, A. J. van Wijk, P. R. Wesselink and E. B. Wolvius (2016). "Patterns of orodental injury and mouthguard use in Dutch field hockey." <i>Br J Sports Med</i> 50(11): 661-668. 2. Vucic, S., R. W. Drost, E. M. Ongkosuwito and E. B. Wolvius (2016). "Dentofacial trauma and players' attitude towards mouthguard use in field hockey: a systematic review and meta-analysis." <i>Br J Sports Med</i> 50(5): 298-304. 3. Jonsson, L., T. E. Magnusson, A. Thordarson, T. Jonsson, F. Geller, B. Feenstra, M. Melbye, E. A. Nohr, S. Vucic, B. Dharmo, F. Rivadeneira, E. M. Ongkosuwito, E. B. Wolvius, E. J. Leslie, M. L. Marazita, B. J. Howe, L. M. Moreno Uribe, I. Alonso, M. Santos, T. Pinho, R. Jonsson, G. Audolfsson, L. Gudmundsson, M. S. Nawaz, S. Olafsson, O. Gustafsson, A. Ingason, U. Unnsteinsdottir, G. Bjornsdottir, G. B. Walters, M. Zervas, A. Oddsson, D. F. Gudbjartsson, S. Steinberg, H. Stefansson and K. Stefansson (2018). "Rare and Common Variants Conferring Risk of Tooth Agenesis." <i>J Dent Res</i> 97(5): 515-522. 4. Vucic, S., T. I. M. Korevaar, B. Dharmo, V. W. V. Jaddoe, R. P. Peeters, E. B. Wolvius and E. M. Ongkosuwito (2017). "Thyroid Function during Early Life and Dental Development." <i>J Dent Res</i> 96(9): 1020-1026. 5. Asllanaj, B., L. Kragt, I. Voshol, M. Koudstaal, M. A. Kuijpers, T. Xi, S. J. Berge, C. Vermeij-Keers and E. M. Ongkosuwito (2017). "Dentition Patterns in Different Unilateral Cleft Lip Subphenotypes." <i>J Dent Res</i> 96(13): 1482-1489.
Project Title:	Three-dimensional (3D) Facial Shape Analysis
Abstract:	<p>The human face is complex three-dimensional structure that makes each of us uniquely distinguishable, but strongly determined by genetic factors. Consequently, many developmental, psychiatric and genetic abnormalities have defined facial morphological features. However, the underlying complexity of facial morphology cannot be fully captured by simple geometric measures. Rather, it is now increasingly clear that the genetic determination of facial morphology and its relation with health outcomes requires more sophisticated quantitative approaches for capturing facial morphology. Recent advances in computational and methodological approaches have made possible accurate and precise derivation of facial traits.</p> <p>This project will focus on developing methods (based on machine learning and deep learning technologies) to derive complex facial measurements. the ultimate aim of this project is to leverage the large-scale 3D facial imaging, which provides extensive genetic and epidemiological measures, to unravel the complexity between genetics, facial morphology and health outcomes.</p>
Requirements of candidate:	<p>We are looking for a highly motivated, hardworking student to join our very international team. Successful candidates are expected to have a strong quantitative or computer science background, excel at critical thinking, with strong motivation to engage in development and application of advanced analytical methods.</p> <ul style="list-style-type: none"> • Master degree in mathematics, computer science, statistics, bioinformatics, physics, electrical engineering, or in an equivalent discipline. • Experience with: Python, linux, shell. • Experience with machine learning methods. deep learning methods is advantage • Scholarship that will, at least, cover subsistence allowance and international air plane ticket (we can help with the scientific part of your scholarship proposal) • English language requirement: English speaking countries & Netherlands: no requirement; Other countries: IELTS 7.0 (min 6.0 for all subs), TOEFL 100 (min 20 for all subs)

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Application requirements & Deadlines:

<https://www.eur.nl/en/about-eur/erasmus-university-china-centre/csc-scholarship>

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<https://www.usnews.com/education/best-global-universities/clinical-medicine?page=3>

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