UNA PALE SIMON

"Electrical engineer and data scientist in the healthcare domain, passionate about open science, science policy, and impactful projects."

Address:	**Zurich, Switzerland**
Telephone:	**+041 77 9130 182, +385 98 186 2526**
E-mail:	**una.pale@gmail.com, una.pale@uzh.ch**
Web page:	**www.una-pale.from.hr**
Date and place of birth:	**1992, Croatia**

ACADEMIC EDUCATION

- **04/2024 - Present** — **Data scientist** at the Neurointensive care unit of University Hospital of Zurich and **postdoctoral researcher** at University of Zurich
- **07/2023 – 10/2023** — **Postdoctoral researcher** at Embedded Systems Lab at EPFL, Lausanne, Switzerland
- **02/2018 – 07/2023** — **PhD student in electrical engineering/neuroscience**
  UP Hummel and Embedded Systems Lab at École Polytechnique Fédérale de Lausanne, Switzerland
- **09/2014 – 09/2016** — **Master of Science in Electrical Engineering and Information Technology**
  Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia (GPA: 4.8/ 5.0)
- **09/2015 – 03/2016** — **Erasmus exchange**
  at Master program Biomedical Engineering, Technical University of Vienna, Austria
- **09/2011 – 07/2014** — **Bachelor of Science in Electrical Engineering and Information Technology**
  Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia (GPA: 4.7/ 5.0)

WORK EXPERIENCE

- **12/2018 – Present** — **NGO Penkala – Croatian Association of Young Scientists**
  Board member, project leader and manager
  Leading the association, funding applications, and deciding on the main plans, activities, and future directions. Working on building a Croatian scientific network and providing additional soft skills education for Croatian scientists.
- **02/2017 – 06/2017** — **Development engineer**
  UMO neuroscience j.d.o.o, Zagreb, Croatia
  Working on a patent for an algorithm for automatic detection of Cz electrode on a neurofeedback headset, which was developed within the company.
- **07/2015 – 09/2015** — **Summer intern**
  Robert Bosch GmbH, Robert Bosch Research Center Renningen, Stuttgart, Germany
  Programming Fanuc robot and industrial cameras for automatic video inspection of products.

PROJECTS

Non-scientific projects:

- EURODOC representative in CoARA ERIP working group — Member of the Ethics and Research Integrity Policy in Responsible Research Assessment for Data and Artificial Intelligence (ERIP) working group of Coalition for Advancing Research Assessment
- "Science and Policy Summer School", 2022 - 2023 — Initiator and co-organizer of PhD summer school funded by EPFL/ETHZ, https://scienceandpolicy2023.epfl.ch/
- Map of Croatian Scientists, 2023 - Present — Initiator and coordinator of web platform aimed at mapping Croatian scientists world-wide, project in the scope of NGO Penkala
- "Istražilica", 2022 - Present — Supporting web platform for scientific opportunities for young Croatian scientists, project in the scope of NGO Penkala
- Podcast "Slušalica", 2018 - Present — Initiator of the first Croatian scientific podcast, host of many episodes, available on YouTube, Spotify and Google Podcasts
- International competition IYNT, 2014-2018 — Co-organizing Croatian selection for the International Young Naturalists' Tournament, student mentoring for the competition

- "Youth Research Center" NGO, 2012 - 2016
- Leading student organization, ensuring funding, organizing workshops and competitions

Scientific projects (latest):
- *Innosuisse project: VentAI - Ventilatory decision support system for acute respiratory failure*
  04/2024 - present — Time series prediction for ARDS prediction and clinical decision support and ventilatory setup based on causal learning
- *Project - Open science practices and perception by young Croatian researchers*
  09/2023 - present — Investigating knowledge, perception, practices and needs of young researchers related to open science in Croatia.
- *Project - Benchmarks for epilepsy detection machine learning algorithms*
  03/2023 - present — Web platform, methodological setup and technical support for fair comparison of machine learning algorithms for epilepsy detection from EEG data. Funded by ETH Domain Open Research Data Program (Contribute projects), project name: Boost4Epilepsy.
- *PhD thesis - Hyperdimensional computing for epilepsy detection from EEG signals*
  09/2019 – 06/2023 — Designing new approaches for hyperdimensional computing for improving epileptic seizure detection from EEG signals, with the ultimate goal of implementation on wearable devices. Co-supervision of several students in the scope of this project.

SCIENTIFIC PAPERS AND CONFERENCES

Latest research publications. All publications can be found on Google scholar or on my ORCID account.
- R. Erlebach, U. Pale, M. Seric, S. Markovic, T. Beck E. Keller: "*Limitations of the SpO2/FiO2-Ratio to classify and monitor Acute Respiratory Distress Syndrome*", DIVI congress, 2024
- J. Dan, U. Pale, A. Amirshahi, W. Cappelletti, T.M. Ingolfsson, X. Wang, A. Cossettini, A. Bernini, L. Benini, S. Beniczky, D. Atienza, P. Ryvlin: "*SzCORE: Seizure Community Open-Source Research Evaluation framework for the validation of electroencephalography-based automated seizure detection algorithms*", Epilepsia, 2024, DOI: 10.1111/epi.18113
- U. Pale, L. Savić, F. Novkoski: "*Strengthening Croatian-UK Research Ties through Network, Collaborations and Initiatives for Scientific Diaspora*", OSF preprint, submitted to JSPG, 2023, DOI: 10.31219/osf.io/y592t
- U. Pale, PhD Thesis: "*Hyperdimensional computing for biosignal monitoring: Applications for epilepsy detection*", 2023, Infoscience EPFL
- U. Pale, T. Teijeiro, S. Rheims, P. Ryvlin, and D. Atienza, "*Combining General and Personalized Models for Epilepsy Detection with Hyperdimensional Computing*", Artificial Intelligence in Medicine, Journal, 2023, DOI: 10.1016/j.artmed.2023.102754

HONOURS AND AWARDS
- Gold medal in 9th "*International Exhibition of Inventions*" (Kunshan, China) 2016 and Silver medal in 14th "*International Innovation Exhibition*" (Zagreb, Croatia) 2016 with "Personal electromyographic biofeedback system - MyMyo"
- *Rector's Award, 2015* - for work on project titled "Audio phonebook for the blind people"
- BEST Engineering Competition (Team Design category), 2013 – 6st place in the international finals
- *Dean's Award "Josip Lončar"*, 2012 - for outstanding performance in the 2nd year of undergraduate, University of Zagreb
- Scholarships
  - The "*City of Zagreb*" University Scholarship (2013 – 2016)
  - "*Internship Programme of German Business for the Countries of the Western Balkans*" foundation scholarship (2015)
  - "*DAAD*" scholarship for German language summer course (2014)
  - The "*City of Zagreb*" High School Scholarship (2009 – 2013)
- International Young Physicists Tournament (IYPT), Teheran, Iran, 2011, bronze medal
- International Young Physicists Tournament (IYPT), Vienna, Austria, 2010, bronze medal

ADDITIONAL EDUCATION AND COURSES

- 09/2022 – 01/2023   **Innosuisse Startup Training**
  Business Concept training at EPFL Innovation Park
- 2019 - 2023   **French language course, EPFL, B1-2**
- 08/2014   **German language course, B1-2**
  German Courses Passau, Passau, Germany
- 09/2000 – 07/2012   **Music school**
  Music High School "Vatroslav Lisinski" - instrument Harp and Clarinet
  Music Primary School "Ivan Zajc" – instrument Piano (2000 – 2007)

PERSONAL SKILLS

Job-related skills	- versatility, persistence, attention to details, reliability and curiosity for research
	- passion for application of science for the good of humanity, science entrepreneurship and science and policy gap
	- ability to work in multicultural environments, challenging social situations etc.
	- experience as a leader in Croatian young scientists' student association "Penkala"
	- organization skills through leading of "Youth research center" student organization, Croatian selection for IYNT as well as many projects of association "Penkala"
	- language knowledge: English C1, German B2, French B1-2
Computer skills	- broad experience with various machine learning algorithms ang signal processing
	- good knowledge and experience with: Matlab, Python, C, Solidworks, Altium
	- basic experience in website development and podcasts recording and video processing
Hobbies	- outdoor oriented person, spending every weekend in nature climbing, hiking or ski touring
	- had musically oriented childhood by playing piano, clarinet and harp
	- recently deep dived into effective altruism