Neil Scheidwasser-Clow

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EXPERIENCE

Ecole Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

Research engineer — *Feb. 2022 –*
- Master enhancement internship at the Behavioral Genetics lab: extending the analysis of my Master's thesis for a publication
- Providing assistance in data science and signal processing for other projects (e.g., fiber photometry, kinematic analysis)

Student assistant — *2019 – 2022*
- 2021-2022: Applied data analysis (CS-401)
- 2019-2021: Analysis III (MATH-203)
- 2019-2021: Projects in Informatics (for SV) (CS-116)

Logitech - CTO office — Lausanne, Switzerland

Scientific advisor — *Sep. 2021 –*
- Assisting interns for projects on deep-learning based speech representations

Engineering intern — *Feb. 2021 – Aug. 2021*
- **Project:** Paralinguistic analysis of speech and non-speech audio signals
- Prepared repositories and submissions for INTERSPEECH and ICASSP
- Designed experiments to record speech under cognitive and physical load conditions

EDUCATION

Ecole Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

MSc in Life Sciences Engineering, Minor: Computational neurosciences — *2019 – 2022*
- **Relevant coursework:** Machine learning, Deep learning, Applied data analysis Controlling behavior in animals and robots, In silico neuroscience
- **Master's thesis:** *Analytical approaches to data from human virtual reality (VR) and neuro-physiology studies*

KTH Royal Institute of Technology — Stockholm, Sweden

Swiss European Mobility Programme – 3rd year Bachelor exchange — *2018 – 2019*

Ecole Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

BSc in Life Sciences Engineering — *2016 – 2019*

Lycée Janson-de-Sailly — Paris, France

Classes Préparatoires aux Grandes Ecoles (CPGE) — *2015 – 2016*
- Intensive undergraduate course in mathematics, physics, chemistry, biology and geology

PROJECTS

Ecole Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

Neuroengineering lab — *Sep. 2020 – Feb. 2021*
- Semester project – comparing different deep learning-based approaches (DeepFly3D, DeepLabCut) for 2D pose estimation of tethered *Drosophila* flies.

Ecole Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland

Psychophysics lab — *Sep. 2019 – Feb. 2020*
- Semester project – investigating how different recurrent neural networks can explain a set of psychophysical results that involve visual grouping and segmentation across space and time.

ETH Zürich — Zürich, Switzerland

Neural Control of Movement lab — *June 2019 – July 2019*
- 5-week internship - implementation of Event-Related Desynchronization (ERD) estimation algorithms for offline and online EEG data.
- Analysed data from motor imagery (MI) experiments
- Designed streaming analytics frameworks for neurofeedback experiments

Technical Skills

Operating systems: Windows, Linux
Office automation: LaTeX, Microsoft Office
Programming languages: Python, C++, Matlab, R, basic knowledge of Julia
Machine learning frameworks: PyTorch, Tensorflow, Keras, scikit-learn
Audio processing: Audacity
Image processing: ImageJ
GUI design: Tkinter

Publications

Scheidwasser-Clow, N., Kegler, M., Beckmann, P., & Cernak, M. SERAB: A multi-lingual benchmark for speech emotion recognition. In *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 7697–7701, 2022. DOI: https://doi.org/10.1109/ICASSP43922.2022.9747348

- Code: https://github.com/Neclow/SERAB
- Featured as one of the strongest submissions of the HEAR 2021 NeurIPS challenge (https://neuralaudio.ai/hear2021-results.html).

Scheidwasser-Clow, N., Faggella, M., Kozlova, E., & Sandi, C. (2021). Commentary: The Risky Closed Economy: A Holistic, Longitudinal Approach to Studying Fear and Anxiety in Rodents. *Frontiers in Behavioral Neuroscience*, *15*. DOI: https://doi.org/10.3389/fnbeh.2021.664941

Preprints & upcoming publications

Elbanna, G., Biryukov, A., **Scheidwasser-Clow, N.**, Orlandic, L., Mainar, P., Kegler, M., Beckmann, P. & Cernak, M. (2022). Hybrid Handcrafted and Learnable Audio Representation for Analysis of Speech Under Cognitive and Physical Load. DOI: https://arxiv.org/abs/2203.16637 [Accepted at Interspeech 2022]

Elbanna, G., **Scheidwasser-Clow, N.**, Kegler, M., Beckmann, P., Cernak, M. (2022) BYOL-S: Learning Self-supervised Speech Representations by Bootstrapping. Under review at HEAR 2021 NeurIPS competition PMLR Special Journal Issue.

Languages

French, English: Native speaker
German: Limited working proficiency
Swedish, Mandarin Chinese: Elementary knowledge

Other interests

Student organizations:
- **Data Analytics Group (DAG) at EPFL**: co-founder
    * 02.2021-09.2021/02.2022-: Head of Communications
    * 09.2021-02.2022: Head of Event Management
    * Goal: building a strong community of students who share a passion for data science and artificial intelligence
- **Erasmus Student Network (ESN) Lausanne**: commitee member (2020-)

Scrabble: Under-18 French World Scrabble Champion (2015), currently in World top-100
Sports: Football, running, skiing, bouldering, tennis, squash