

Tim Berti

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github.com/TimBerti

Education

M.Sc. Physics, Karlsruhe Institute of Technology

Oct 2021–Apr 2024 (estimated)

Main subjects: Theoretical Particle Physics and Optics

Thesis: Machine Learning-Based Analysis of Steady-State Visual Evoked Potentials for the Diagnosis of Color Vision Deficiencies

- Planning and conducting experiments measuring EEG data
- Development of software to display stimuli that elicit electrical responses in the brain with the capability to simulate color vision deficiencies
- Building a signal processing pipeline (RANSAC detrending, Butterworth filters, Canonical Correlation Analysis, Wavelet Transform)
- Training machine learning algorithms (Convolutional Neural Network, Principal Component Analysis, Support Vector Machine) to predict color vision deficiencies

B.Sc. Physics, Karlsruhe Institute of Technology

Oct 2016–Jul 2019

Thesis: Investigation of the alignment between detector and spectrometer at the KATRIN experiment

- Determining the center points of annular distributions on a detector with Non-Cartesian pixels using Generalized Linear Models

Experience

Research Assistant, Forschungszentrum Informatik

since Feb 2023

- Automating the conversion of questionnaire data contained in a PostgreSQL database and polysomnography data into FHIR resources
- Setup of a FHIR Server on a virtual machine and implementation of user defined queries
- Working in a software development team

Co-Founder, StocksOnView OÜ

Dec 2020–Feb 2023

- Setup of a PostgreSQL database with 10 years of financial data for about 4000 publicly traded companies and automated daily updates, time series analysis and calculations of financial figures
- Application of statistical models (e.g. Linear Regression, K-Means Clustering and Monte Carlo Simulation) to noisy data
- Founding a company as an e-resident in Estonia, developing a business plan and pitching ideas

Voluntary Military Service, Gebirgsjägerbataillon 231

Sep 2019–Sep 2020

- General infantry training with specialization in combat in alpine terrain

Skills

- Python (NumPy, Pandas, Scikit-Learn, PyTorch, OpenCV, etc.), PostgreSQL, Git
- Proficient in German (native) and English (CEFR Level C1)

A selection of projects I've worked on can be found at timberti.github.io