Edden Gerber

PhD: Computational Neuroscience

website: edden-gerber.github.io

In my recently completed PhD I studied visual information processing in the brain by analyzing time series data with statistical and machine learning tools. I have a broad range of skills that I seek to apply to real-world problems, as well as proven experience with quickly acquiring expertise in new data domains and skillsets. In recent months I have been rapidly gaining experience with ML through personal projects, courses, hackathons (*Armis challenge 2nd place, Datahack2019*), etc. - See my website for examples.

EXPERIENCE

- 2009-2018: **PhD** in **computational neuroscience**, ELSC, Hebrew University of Jerusalem.
  Thesis title: *Cortical Representations of Persistent Visual Stimuli*. Through my research I acquired a very high level of expertise in:
  - **Statistics**: hypothesis testing, parameter estimation, statistical modeling.
  - **Data analysis**: data collection, cleaning, analysis, visualization. I am particularly proficient with time series and spectral analysis.
  - **Machine learning**: Made extensive use of regression, classification, and dimensionality reduction algorithms in my research. Robust theoretical basis for ML.
  - **Programming**: Matlab (*expert*), Python (*numpy, pandas, sklearn, keras, etc.*).

  And demonstrated the following qualities:
  - **Experienced problem solver** (used to overcoming both deep theoretical challenges and low-level technical hurdles).
  - Very efficient on-the-fly **learner** (became expert in entirely new neuroimaging domain within last year of PhD).
  - **Highly self-sufficient** (PhD research involves high degree or self-management and technical self-reliance).
  - Highly enthusiastic about **knowledge sharing and methodological contribution** (wrote numerous white papers and code utilities).
  - Proficient in technical writing and presentation.
  - Great interpersonal and team working skills.
- 2003-2009: **System engineer and consultant**, Elta Ltd (of the Israeli Aerospace Industry).
  My position involved **analysis of communication protocols** to invent new capabilities for signal interception systems. I participated in system **architecture design and software development** (C++).
- 2008-2009: **Research Assistant**, Tel Aviv University (**hypothesis testing statistical analysis**).

UNDERGRADUATE EDUCATION

- 2004-2008: BA, Psychology and Literature, Tel Aviv University.

MILITARY SERVICE

- 2000-2003: **Signal researcher, unit 8200** (reverse engineering of digital communications protocols).

OTHER

- 2012-2019: **Co-founder and board member** of Common Ground, non-profit organization for gender education.

PUBLICATIONS

- Gerber, E. M., Sadeh, B., Ward, A., Knight, R. T., & Deouell, L. Y. (2016). Non-Sinusoidal Activity Can Produce Cross-Frequency Coupling in Cortical Signals in the Absence of Functional Interaction between Neural Sources. PLOS ONE 11(12).
- Gerber, E. M., Golan, T., Knight, R. T., & Deouell, L. Y. (2017). Cortical Representations of Persistent Visual Stimuli. NeuroImage 161.
- Gerber, E. M., Deouell, L. Y. Sustained High- and Low-Frequency Neural Responses to Visual Stimuli in Scalp EEG (submitted).

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