Joseph H. Rudoler

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Education

2023 – **Ph.D., Statistics and Data Science**
University of Pennsylvania, The Wharton School

2020 – 2023 **M.S.E., Data Science**
University of Pennsylvania, School of Engineering and Applied Science
Thesis title: Transfer learning to improve memory state classification from EEG.
Awards: Honorable mention for Best Thesis

2016 – 2020 **B.A., Physics and Astronomy**, *Magna Cum Laude*
University of Pennsylvania, School of Arts and Sciences
Awards: Dean's List 2017-20, Jeffrey Greenberg Undergraduate Research Fellowship

Employment

2021 – 2023 **Data and Programming Specialist**
Computational Memory Lab, University of Pennsylvania
Role: staff data scientist, managing data pipelines

2020 – 2021 **Clinical Research Specialist**
Computational Memory Lab, University of Pennsylvania
Role: coordinating multi-site project, collecting iEEG data from epilepsy patients, maintaining clinical imaging and electrode localization pipeline

Teaching

2023 – **STAT6130, Regression Analysis for Business**
Teaching Assistant

2023 **Wharton Moneyball Academy**
Teaching Assistant

2021 **Estes Summer Workshop in Model-based Cognitive Electrophysiology**
Lecturer

2019 – 2020 **CIS105, Computational Data Exploration**
Tutor

2017 – 2019 **PHYS150/151, Introductory Physics**
Department Tutor (open office hours)

Publications

Papers

1 **Joseph H. Rudoler**, Nora A. Herweg, and Michael J. Kahana. "Hippocampal Theta and Episodic Memory". In: *Journal of Neuroscience* 43.4 (Jan. 2023), pp. 613–620. ISSN: 0270-6474, 1529-2401. DOI: 10.1523/JNEUROSCI.1045-22.2022. (Visited on 02/19/2023).

Preprints

1. Matthew R. Dougherty, Woohyeuk Chang, **Joseph H. Rudoler**, Brandon S. Katerman, David J. Halpern, James P. Bruska, Nicholas B. Diamond, and Michael J. Kahana. *Neural Correlates of Memory in an Immersive Spatiotemporal Context*. Dec. 2022. DOI: 10.1101/2022.11.30.518606. (Visited on 02/19/2023).

2. Michael J. Kahana, Lynn J. Lohnas, Karl Healey, Ada Aka, Adam Broitman, Elizabeth Crutchley, Patrick Crutchley, Kylie H. Alm, Brandon S. Katerman, Nicole E. Miller, Joel R. Kuhn, Yuxuan Li, Nicole M. Long Jonathan Miller Madison D. Paron Jesse K. Pazdera Isaac Pedisich Christoph T. Weidemann, Madison D. Paron, Jesse K. Pazdera, Isaac Pedisich, **Joseph H. Rudoler**, and Christoph T. Weidemann. *The Penn Electrophysiology of Encoding and Retrieval Study*. Mar. 2022. DOI: 10.31234/osf.io/bu5x8.

3. **Joseph H. Rudoler**, James P. Bruska, Woohyeuk Chang, Matthew R. Dougherty, Brandon S. Katerman, David J. Halpern, Nicholas B. Diamond, and Michael J. Kahana. *Optimizing Learning via Real-Time Neural Decoding*. Aug. 2023.

Posters

1. **Joseph H. Rudoler**. *Decoding and Optimizing Episodic Memory*. Poster. Toronto, Canada: MathPsych, July 2022.

2. **Joseph H. Rudoler**. *Decoding and Optimizing Episodic Memory*. Poster. San Francisco, California, USA: Cognitive Neuroscience Society, Apr. 2022.

3. **Joseph H. Rudoler**. *Ocillatory and Fractal Biomarkers of Human Memory*. Poster. Lisbon, Portugal: Computational and Systems Neuroscience (COSYNE), Mar. 2022.

Datasets

1. Michael J. Kahana, **Joseph H. Rudoler**, Lynn J. Lohnas, Karl Healey, Ada Aka, Adam Broitman, Elizabeth Crutchley, Patrick Crutchley, Kylie H. Alm, Brandon S. Katerman, Nicole E. Miller, Joel R. Kuhn, Yuxuan Li, Nicole M. Long, Jonathan Miller, Madison D. Paron, Jesse K. Pazdera, Isaac Pedisich, and Christoph T. Weidemann. *Penn Electrophysiology of Encoding and Retrieval Study (PEERS)*. OpenNeuro, 2023. DOI: doi:10.18112/openneuro.ds004395.v2.0.0.

2. **Joseph H. Rudoler**, Matthew R. Dougherty, Brandon S. Katerman, James P. Bruska, Woohyeuk Chang, David J. Halpern, Nicholas B. Diamond, and Michael J. Kahana. *"Spatial Memory and Non-Invasive Closed-Loop Stimulus Timing"*. OpenNeuro, 2023. DOI: doi:10.18112/openneuro.ds004706.v1.0.0.