Nathan Riek

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SUMMARY

Machine learning and signal processing engineer with deep expertise in ECG and EEG analysis. Strong background in Python, deep learning, statistical analysis, building robust preprocessing pipelines for ECG and EEG data, and designing clinically explainable dashboards for real-time insights. Interested in data science and applied ML roles that leverage my experience with biosignal data.

EXPERIENCE

Postdoctoral Research Associate – University of Rochester
Sep 2025 – Present

- Deploying a machine learning–driven decision support tool into a production workflow within an Azure cloud environment

Data Science Intern – HeartBeam
Sep 2024 – Dec 2024

- Trained deep learning model to predict cardiac age from time-series ECG data using Python and PyTorch
- Leveraged Selenium to automate data preparation and prediction retrieval, reducing manual effort and enabling scalable, structured analysis of ECG datasets

PhD Researcher – University of Pittsburgh
Jan 2021 – Aug 2025

- Built an explainable machine learning decision support platform using Dash + Azure to assist clinicians in ECG interpretation
- Developed PyTorch models for ECG-based classification of occlusion myocardial infarction; recognized as winner of 2024 ISCE Early Career Investigator Award
- Designed scalable ECG and EEG preprocessing pipelines (Python/MATLAB); adopted by 5+ research institutions
- Co-authored publications in Nature Medicine, European Heart Journal, and IEEE Transactions on Biomedical Engineering

Engineering Co-Op - Eaton
Sep 2018 – Aug 2020

- Created C# GUI application to automate testing of electronic trip units (Summer 2020)
- Supported PLC installation/testing, AutoCAD schematic design, and Lean Six Sigma process improvement initiatives (Summer 2019)
- Integrated programmable RF attenuator into automated TestStand/LabVIEW workflow (Fall 2018)

EDUCATION

PhD, Electrical and Computer Engineering – University of Pittsburgh, 2025
BS, Electrical Engineering – University of Pittsburgh, 2020
IBM Data Science Professional Certificate – Coursera, 2025
IBM Generative AI Engineering Professional Certificate – Coursera, 2025

SKILLS

Programming & ML: Python, PyTorch, Scikit-learn, R, MATLAB
Data Engineering: SQL, Pandas, NumPy, SciPy, Selenium
Visualization: Plotly/Dash, Streamlit, Matplotlib, Seaborn
Version Control: Git, GitHub

PUBLICATIONS

Google Scholar: https://scholar.google.com/citations?user=92lDKDSlhugC&hl