Kenny Chou, Ph.D.

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Technical Skills

- **Time-Series analysis** — Physiology waveforms (PPG, ECG), audio & speech, digital signal processing.
- **Data** — statistical modeling, feature engineering, machine learning, time-frequency analysis, visualizations.
- **Coding** — Python (5+ years; Numpy, Pandas, Pytest, SKlearn, Matplotlib, Plotly), Bash, Matlab (10+ years).
- **Others** — AWS, Redshift, SQL, DataBricks, Version Control (Git), test-driven development, CI/CD, Docker.

Relevant Experience

Koninklijke Philips N.V., Cambridge, MA 01/2024–present

Data Scientist/ML Engineer

- Maintained and optimized data processing pipelines for large scale physiological dataset.
- Wrote tests and optimized ML algorithms for scaling and production, increasing maintainability and reproducibility.
- Lead code review and best practice discussions for software and ML.
- Reviewed experiments and statistical analyses to ensure data completeness and validate model performance.
- Increased efficiency and collaboration across research teams by incorporating DevOps and Agile practices.

Global Health Labs, Bellevue, WA 02/2021–09/2021, 04/2023–01/2024

Clinical Data Scientist (contract, remote)

- Designed and implemented models in Python for extracting digital biomarkers (respiratory rate, HR, HRV, etc.) from noisy, real-world time-series physiological data (e.g., PPG, capnography), using techniques including DSP, statistical learning, and feature engineering.
- Consulted on experimental design for developing GHL's proprietary wearable device. Collaborated with international team of engineers, healthcare providers, and clinical study coordinators to determine study design parameters (e.g., key milestones, study size, and study end points).
- Built pipeline to process (e.g., clean, time align, filter) and analyze raw clinical data and experiment progress, for communicating results across multifunctional teams & ensure data completeness.

Current Health, Boston, MA 09/2021–03/2023

Applied Data Scientist — Biomedical Engineering

- Improved wearable device accuracy for biomarker estimation by over 35% while working within FDA constraints, while simultaneously improving algorithm performance and reducing of associated compute cost by over 50%.
- Designed and built ELT pipeline with Software Team in Python and SQL to enable repeatable, semi-automated reporting of large EHR datasets, resulting in over 80% reduction in manual effort.
- Collaborated cross-functionally with Product and Customer Success teams to deliver clinical and operational insights and visualizations for quarterly business reviews to extend and expand current contracts worth $3MM.
- Implemented ML models (regression, classification, LSTMs, forecasting) on large-scale time-series clinical and sensor data to prototype smart alarms for early event detection.
- Lead effort to resolve inconsistencies in data reported across multiple teams. Improved alignment and communication across teams and established processes to ensure data quality and reproducibility.

Sen Lab, Boston University 05/2016–05/2021

Graduate Research Fellow

- Spearheaded research effort on the optimization of spiking neural networks through transfer learning from DNNs.
- Designed and implemented novel speech segregation algorithm in MATLAB, benchmarked against ML and deep learning models. Published results in JARO.
- Awarded US Patent No. 10,536,775. for a method of speech processing.
- Led and supervised 3 junior research fellows in modeling project. Results contributed to winning NIH/R34 and NSF awards, totaling $1.7 million.

Education

Boston University Ph.D., Biomedical Engineering, 2020

		Distinguished Biomedical Engineering Fellow (2013)
	M.S., Biomedical Engineering, 2017	Google Scholar: https://bit.ly/3gazuB2
University of Washington	B.S., Biomedical Engineering, 2013	Washington Research Foundation Fellow (2011, 2012)
	B.S., Electrical Engineering, 2013 Minor in Mathematics	