Paul Yoon

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EDUCATION

STANFORD UNIVERSITY Expected Graduation: Jun 2027
Bachelor of Science, Mathematics, Minor in Music *GPA: 3.8/4.0*

Relevant Coursework: Linear Algebra, Differential, and Integral Calculus of Several Variables, Computer Organization and Systems, Real Analysis, Probability Theory for Computer Scientists, Machine Learning, Math for Machine Learning

PROFESSIONAL EXPERIENCE

SUNDIAL Palo Alto, CA
Data Science Intern *Jul 2024 – Sep 2024*

- *Sundial is a Series A startup building an automated data science and product analytics tool founded by two early Meta executives, one of whom went to Sequoia Capital before founding Sundial.*
- Developed classifier identifying fraudulent users using behavior-based thresholds, reducing false positives compared to existing process by 50% and boosting overall detection accuracy by 75%.
- Created, trained, and tuned a time series seasonality model, outperforming existing model by 120% as measured by mean absolute percentage error (MAPE)
- Worked with data scientists and software engineers to identify 10+ product enhancements and opportunities

STANFORD SCHOOL OF MEDICINE Stanford, CA
Research Assistant *May 2020 – Jun 2023*

- Collected data and analyzed visual indicators of pain in PET/MRI scans of 15 patients with chronic knee pain
- Presenter at the annual meeting of the Society of Nuclear Medicine and Molecular Imaging in June 2021: "S1R PET/MRI of patients with chronic knee pain reveals potential pain generators not otherwise identified with standard care: Early experience"
- Co-authored manuscript: "Sigma-1 receptor changes in chronic knee pain: Preliminary results of 15 patients using PET/MRI"

PROJECTS

An Exploratory Analysis of Feature Representation in Music Source Separation
Python, LaTeX *Jan 2025 – Mar 2025*

- Implemented Multiple Featurization Approaches (STFT, Mel-spectrogram, 1D conv) within a Band-Split RNN to isolate vocal tracks
- Integrated HiFi-GAN for Mel-spectrogram inversion, improving audio reconstruction quality
- Optimized Training via PyTorch AMP, hyperparameter tuning, and data augmentation on the MUSDB18 dataset

Explicit/Implicit Heap Allocator
Unix, C *May 2024 – Jun 2024*

- Implemented the "malloc", "realloc", and "free" functions optimizing for request throughput and memory utilization
- Utilized an explicit list of nodes to assign optimal locations for new memory requests and lower memory fragmentation
- Achieved 91% memory utilization via testing on heap activity memory requests from Emacs, Cmake, and Firefox

Stanford Christian Students App
React Native, Typescript *Jun 2024 – Present*

- Transformed the application by implementing 10+ UI enhancements and integrating new functionality using React Native libraries, including an interactive Bible feature
- Maintaining code readability, function decomposition, and bug fixing among the app's 50+ megabyte codebase

TECHNICAL SKILLS

Languages: Python, TypeScript, SQL, C++, C, HTML/CSS
Frameworks/Libraries: Pandas, NumPy, Matplotlib, scikit-learn, React, React Native, Next.js
Developer Tools: LaTeX, Git, Unix, Vim, VS Code, Apache Spark, Snowflake, Jupyter Notebook, Qt Creator