KAI M. HUNG

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EDUCATION

B.A. in Mathematics & Computer Science **GPA: 3.95**

Rice University

Aug 2020 – May 2024 | Houston, TX

- **Relevant Coursework:** Operating Systems, Distributed Machine Learning, Machine Learning with Graphs, Parallel Programming, Optimization for ML, Advanced Algorithms & Data Structures, Object-Oriented Program Design, Honors Linear Algebra, Probability & Statistics
- **Awards:** Cornell, Maryland, Max Planck Pre-Doctoral Fellowship (2023), Southern Regional Conference On Statistics Undergraduate Fellowship (2021), President's Honor Roll (2020, 2021, 2022).

EXPERIENCE

Machine Learning Research Assistant

Rice University

Aug 2022 – Ongoing | Houston, TX

- Building an optimal transport-based **topological data analysis toolkit** for collaborating biologists to predict disruptions to Sub-Saharan Food Web networks by human intervention activities under Dr. César Uribe.
- Implemented a **graph factorization** algorithm capable of separating simple network structures (e.g. cycle and star graphs) with **92% accuracy**.
- Selected to present at the Rice Undergraduate Research Symposium with poster publicly available at **katatech.github.io/research**.
- Awarded the prestigious campus-wide **Rice Undergraduate Scholars Fellowship ($1000)**; total cohort is 25 students out of 4,000.

Skills: Python, PyTorch, NetworkX, Scikit-Learn, GeoPandas, Pandas, NumPy, Matplotlib, Seaborn, Jupyter Notebook, Linux, Git

AI Research Intern

Berkeley AI Research

Jun 2022 - Aug 2022 | Berkeley, CA

- Prototyped **reinforcement learning** models for cloning human participant actions in an approach-avoid game under Dr. Alison Gopnik.
- Developed Q-Learning model capable of learning differential responses between children and adults regarding an object's pattern and color; achieved **55% performance improvement** over the baseline model.
- Presented work at the Summer Undergraduate Research Poster Session hosted jointly by Berkeley EECS and Berkeley AI Research.

Skills: Python, NumPy, Matplotlib, Jupyter Notebook

Software Engineer

RiceApps

May 2021 - May 2022 | Houston, TX

- Build **Rice Carpool**, a ride-sharing web app for Rice University students, using **ReactJS**, **GraphQL**, and **MongoDB**.
- Implemented ride creation and user onboarding features, **servicing 933 users on a 4000-student campus with 868 successful ride matches**.
- Assisted fellow developers with feature development, bug fixes, and user testing during the weekly sprint and scrum sessions.
- Handled 32 out of 164 total tickets submitted year-round, accounting for 20% of development activities across the entire app.

Skills: React, JavaScript, CSS, HTML, GraphQL, MongoDB, NodeJS

PROJECTS

Rice Carpool A ride-sharing app for Rice University students to schedule rides with one another. Built with ReactJS.

Connect the Dots A Graph Neural Network (GNN) model for edge prediction using a Bill.Com client network. Built with PyTorch and Scikit-Learn.

Yalnix An operating system kernel for the simulated Rice Computer Systems hardware. Built with C independently in two weeks.

Arxiv Analyzer Implemented the PageRank algorithm for analyzing 5000 papers from the Arxiv paper archive fully in SQL.

Text Document Classifier Built a TF-IDF-based text classifier on 170,000 court case documents using Python, PySpark, and AWS.

LEADERSHIP

Head Peer Academic Advisor

- Lead a team of 12 peer academic advisors to provide academic and career planning services to ∼300 students at a residential college.
- Led a team of 30+ upperclassmen to curate a 67-page academic guide spanning more than 50 majors at Rice University, complete with personalized upperclassmen advice and popular student org recommendations.

Teaching Assistant

- Explained complex algorithmic and mathematical topics including dynamic programming, network flow, randomized algorithms, and computational complexity to 292 students over weekly office hours and the Piazza forum.
- Verified and created exam problem solutions.
- Hosted weekly lab sections to teach data science with R for an introductory probability & statistics course.

SKILLS

Python | C | JavaScript | SQL | R | Java | HTML | CSS | Linux

PyTorch | Tensorflow | Scikit-Learn | React | GraphQL | PySpark | AWS

LANGUAGES

English
Chinese
Japanese