ABHINAV GANESH

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EDUCATION

The University of Texas at Austin, Austin, TX — May 2025
Bachelor of Science, Double Major: Computer Science and Mathematics; Minor in Applied Statistical Modeling
GPA: 3.9220

National University of Singapore - Semester Exchange — Jan 2023 - May 2023

SKILLS

Technical/Computer Skills: *Advanced Java, Python; Intermediate C, C++, Javascript, TypeScript, R, Data Science; Basic HTML/CSS*
Languages: *Intermediate Spanish, Basic Tamil*

EXPERIENCE

Esri, Redlands, California (*Software Development Intern, Field Maps Team*) — May 2024 - August 2024
- *TypeScript, Playwright, StencilJS, Ember, OpenAI API, Python, Selenium*
- Exploring **RL** and **LLM** based methods to **create Natural-Language based testing framework**. Presented findings to team; Paper being written.

Seton Stroke Institute/Department of Neurology, Austin, Texas (*Undergraduate Research Assistant*) — January 2022 - Present
- *Python, R, pybids, nilearn, ANTs, OpenCV, Docker, multiprocessing*
- Work with clinical trial data regarding stroke patients to develop CT image processing pipeline. Implemented **customized ML techniques to process low resolution** image data. **Contribute to open source** image processing libraries (ANTs, CT BET). Perform trial work with new softwares.

Quantitative Criticism Lab, Austin, Texas (*Undergraduate Research Assistant*) — December 2023 - Present
- *Python, Tensorflow, BERT*
- **Implement context-based quote retrieval model** for novel Latin corpus designed by interdisciplinary research team

Esri, Redlands, California (*Software Development Intern, Field Maps Team*) — May 2023 - August 2023
- *TypeScript, StencilJS, ArcGIS Maps SDK for JavaScript, ArcGIS Python API, Python, LangChain, Chroma, FAISS, OpenAI API, LLaMA, HuggingFace*
- R&D to explore use of **NL interfaces** with current products; created demo projects utilizing **RAG** systems; presented findings.

Hutter Research Group, Austin, Texas (*Undergraduate Research Assistant*) — August 2021 - August 2023
- *Python, Scikit-learn, Seaborn, Pandas, NumPy*
- Performed **data analysis** and built **visualization tools** to display gas data to aid analysis of gas ionization characteristics to aid graduate student with design of portable gas sensor

UnitedHealth Group/Optum, Remote (*Intern - Data Engineer Team*) — June 2022 - August 2022
- *Full-stack development (Java, Spring, HTML/CSS/JavaScript), SQL*
- Worked in team of four to develop internal tool with in-line editing for efficient comparison of databases. Took lead on webpage creation and Spring Boot API. Projected to **reduce 40% time** spent on developing queries.

PROJECTS

Parallelization of Novel OCR Error Correction Algorithm — April 2024 - May 2024
- *OpenMP, C++*
- Parallelized algorithm to correct results from Optical Character Recognition; **over 35x faster** than sequential code with **same accuracy**. Tested configurations across multiple levels of parallelization, caching, and data sizes.

CurbCut: A Mobile Application for Accessibility-Focused Routing — July 2023
- *Kotlin, Flask, ArcGIS Maps SDK for Kotlin, PRAW, OpenAI API*
- Android application to provide accessible routes based on user preferences to avoid barriers to accessibility, along with some social media and chat interface functionality for help. **Finalist** team (top 8) in Esri intern Hackathon.

StudySmart: A Tool to Extract Targeted Questions from Released AP Exams — August 2020 - May 2021, March 2022
- *Python, Google Sheets API, Tesseract OCR, Natural Language Processing, Scikit-learn, RegEx, Pandas, Tkinter, PandasTable*
- Under mentorship of Professor Suma Bhat from the University of Illinois at Urbana-Champaign. **Created labeled dataset** of 276 chunks of text scraped from AP curriculum to **train NLP model** to **classify ~1000 questions** scraped from previously released AP exams into units with **over 90% accuracy.** Designed and created **web application** using this data to help students focus on targeting specific areas to improve their scores.

LEADERSHIP & COMMUNITY INVOLVEMENT

NUS Arts Festival 2023 - *Light Years, Week Days*, Singapore, Singapore — January 2023 - May 2023
- Collaborated with interfaculty team and professors to design and create wind chimes and capacitive touch keyboards using arduino. Presented as part of interactive art installation outside NUS' YST Conservatory of Music.

UT Austin TIDES - Science Sprint, Austin, Texas — March 2021
- Analyzed campus vehicle usage data to determine the scope of their greenhouse gas emissions and determine more efficient routing methods for campus vehicles. Presented findings to university staff to be incorporated into department policy.

Certificates & Awards

- College of Natural Sciences University Honor Roll
- CAS Case Study Competition - Honorable Mention (Spring 2022)