Umang Gupta

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Education

Singapore University of Technology and Design | GPA 4.46/5.0, Honors List — Sept. 2020 – May 2024
Bachelor of Engineering in Computer Science, Minor in Artificial Intelligence

Stanford University | International Honours Programme — Jun 2023 – Aug 2023

Relevant courses: Data Structures and Algorithms, Operating Systems, Concurrency, Database, Networks, Machine Learning, Artificial Intelligence, High Performance Computing, Data Science

Certfication: (Pursuing) Google Machine Learning Engineer

Work Experience

Grab — Jan 2023 – May 2023
Software Engineer Intern | Kotlin, Java, Git, RxJava, Dagger, Android Studio

- Reduced Grab Driver Android app debugging time by 45% with a custom TCP socket message logger.
- Boosted Grab Driver activity by 25% through complete Android app development of a targeted incentivization feature.

Projects

HPC-Enhanced Animation | Python, OpenGL, Slurm, HPC, Apptainer, Docker, Anaconda — Jul 2023 – Aug 2023

- Orchestrated seamless integration of the innovative animation methodology from the research repository into the HPC cluster setup, harnessing parallel processing for efficient rendering and visualization tasks.
- Worked under Professor Steve Jones, Director of HPC @ Stanford

Deepfake Audio Detection | Python, PyTorch, SciPy, Signal Processing — Apr 2023 – Present

- Leading a team of 8 to research and implement multiple audio deepfake detectors
- Working with Professors from SUTD and mentor from Singapore HTX

Dygnostic | Ruby on Rails, JS, HTML, Python, GCP, Postgresql, React, Cucumber, Rspec — May 2022 – Aug 2022

- Led a team of 6 to develop a web app to automate TSH Group's machine inspection to attain 30% time reduction
- Utilised Cloud Vision to automatically analyze quality of label on the machine components
- Recognized as the best architecture for implementing REST APIs and microservices
- Followed BDD and TDD, succeeded as the best tested software in 15 projects by conducting unit and e2e testing

RDTonUDP | Python, Networking, TCP/UDP, Git — Sept 2022 – Oct 2022

- Designed and implemented a congestion-controlled, pipelined Reliable Data Transfer (RDT) protocol over UDP, enabling secure text file transfer across unreliable networks.
- Successfully achieved 0 crashes in the program, thoroughly tested on remote machines with seamless server and client execution on both same and different machines.

VoiceBus | Swift, IOS, Machine Learning, Git — Dec 2021 – May 2022

- Led a team of 4 under direct mentorship of Apple's Systems Engineer to develop a full-stack iOS voice enabled bus information app for the visually impaired
- Applied machine learning to create text-to-speech and speech recognition engines for the app
- Succeeded as the only app to receive positive user feedback, and to publish the app on App store
- Winner of Swift Inclusive App Development Hackathon 2022

HawkerGO! | Java, Android, Google Firebase, Junit, Git — Feb 2022 – Apr 2022

- Led a team of 6 to develop a full stack Android application, to view and review hawker stalls and hawker centres in Singapore supporting local stores not available on Google Maps
- Ranked 4th among over 200 students for innovation and architecture of the app

Who Wants to be a Millionaire | C++, Git — Sep 2019 – Oct 2019

- Developed an online version of "Who wants to be a millionaire" using C++
- Recognized as top 5 C++ projects among 150 students

Awards & Accomplishments

The Jyoti and Aditya Mathur Environmental Award — SUTD
Received for organising first sustainability themed design thinking hackathon of SUTD with 200 applicants — Mar 2022

The Design and AI in the Data Driven World Challenge — SUTD X DBS
Won 500 SGD in pitching an AI powered credit card recommendation engine in Paylah App — Sept 2021

APPENDIX

Technical Skills

Languages: Languages: Python, Java, JavaScript, C/C++, R, SQL, Swift, Kotlin, Ruby, HTML/CSS, Alchitry
Frameworks: JUnit, React, Spring Boot, Selenium Rails, Sinatra, Rspec, MongoDB, Dagger, Docker, Apptainer
Developer Tools: Git, Docker, Jupyter Notebook, VSCode, Android Studio, Xcode, Google Cloud Platform, Anaconda
Other Skills: Software Design, Software Architecture, UML, Software Testing, CI/CD, Parallel Computing, High Performance Computing, Machine Learning, Data Science
Libraries: Multiprocessing, MPI, NumPy, Pandas, Scikit-Learn, TensorFlow, PyTorch, Matplotlib, OpenAI, Da-vinci, Cryptography, Socket

Other Projects

LectureGenie | Python, Open AI, Da-vinci, Git — Apr 2023 – Apr 2023
- Created an AI Telegram bot to convert youtube links and lecture videos to question and answers
- Uploaded the question answers to notion and shared custom link
- Created the telegram bot in 15 hours for AISG Penta Hack, secured top 10 position among over 30 teams

Rewards4U | Python, AWS SageMaker, LambdaMART, Git — Jan 2023 – Jan 2023
- Created a data-driven payment service recommendation engine with AWS SageMaker and LTR algorithm
- Optimized payment service ranking with LambdaMART to prevent errors and improve relevance
- Developed an ML-powered API for seamless payment service comparison and maximum rewards.

Secure File Transfer | Python, Cryptography, Git — Jul 2022 – Aug 2022
- Implemented a secure file upload application from a client to a secure file server ensuring Confidentiality, Integrity, Authentication and Preventing Replay Attack
- Won best program award out of 250 students for fastest secure encrypted file transfer

Shell | C, Git — Jun 2022 – Jun 2022
- Created shell to find files, change directory, count lines, check daemon processes and show available commands
- Succeeded as the fastest coder to create shell in 12 hours among 250 students with no crashes from auto-testing

FDM5K | Alchitry, Lucid, FPGA, Git — Feb 2022 – Apr 2022
- Led a team of 8 to develop a hardware game inspired by Bishi-Bashi arcade game
- Won 5th place among over 200 students for hardware quality, effectiveness of datapath, complexity of game

Pacman | Python, Git — Jul - 2022 – Aug 2022
- Developed a copy of Pacman game using Python within 15 hours
- Hailed as the best game developed in cohort of 550 students

References

Steve Jones | Director, High Performance Computing Center (HPC) @ Stanford — HPC Course Professor
Gokul G | Software Engineer Manager II @ Grab — Manager
Natalie Agus | Senior lecturer @ ISTD, SUTD — Computational Structures & OS Course Professor
Tyler McDaniel | PhD, Sociology @ Stanford — Data Science Course Professor
Bernard Ee | Senior Lecturer @ SUTD — Academic Mentor