TANMAY GHAI

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EDUCATION

University of Southern California July 2020 - December 2021
Master of Science in Computer Science

University of California, Berkeley August 2015 - May 2019
Bachelor of Arts in Computer Science

Relevant Coursework: Data Structures, Machine Learning, Advanced Algorithms, Databases, Networking, Operating Systems, Artificial Intelligence, Discrete Math and Probability Theory, Linear Algebra, Data Science, Computer Graphics

EXPERIENCE

Workday July 2019 - Present
Software Development Engineer *Pleasanton, CA*

- I am a back-end developer as part of a full-stack feature team in the Platform side of Developement @ Workday. We are building robust, scalable frameworks to enable our platform to ensure millions of users continue to have the best experience possible on Workday.
- **Contributed to a variety of different projects and platform optimizations**: new integration between Workday and LinkedIn (LinkedInRSC), a SpringBoot ClassPathScanning optimization for compile time of our UIS application using reflection, WD internal security tokenization (VSS), optimizing pdf/excel export on the platform as well as a brand new application driven framework supported by our back-end (hubs).

Workday May 2017/2018 - August 2017/2018
Software Engineering Intern *Pleasanton, CA*

- In 2018, worked on a full-stack, key release feature for WD32 to implement a **visual, interactive scheduler for team scheduling and workforce management**. Technologies used include Java, ReactJs, Javascript.
- In 2017, worked on a multi-layer, **cross stack debugging microservice** for developers to detect errors in the platform (scaled and dealt with millions of transactions per hour). Technologies used include Java, SpringBoot, Apache Kafka, Kafka Streams, ELK Stack, and MongoDB.

ServiceNow May 2016 - August 2016
Cloud Platform Development Intern *Santa Clara, CA*

- Generated key reports on **user behavior and usage analytics using machine learning** via Matlab, Kibana, and Tableau to analyze customer usage trends on the platform
- Wrote scripts, scrapers, and code to collect/sanitize/manipulate and analyze data for over 500+ customers.

RESEARCH EXPERIENCE

Integrated Circuits & Systems Group, Boston University
RISE Research Assistant *Boston, MA*

- Conducted research and trained **convolutional neural networks (CNN's)** for facial image recognition and detection under **Prof. Ajay Joshi**.
- Simulated and tested with facial images of over 100+ graduate students from CMU, UC Berkeley, and UC Irvine (reached a classification accuracy of 74-77%).

Wang Lab, UC San Diego
AC Research Assistant *San Diego, CA*

- Researched early detection of diseases by analyzing and comparing mRNA gene expression levels of bone marrow mouse cells. Found 982 differentially expressed genes in the 18 cells, and analyzed some of these genes to determine the heterogeneity between cells.

· Supervised by **Dr. Rizi Ai and Dr. Wei Wang** in Dept. of Biochemistry at University of California, San Diego

PROJECTS

Real Time N-Body Cosmological Simulation 1000+ lines, ThreeJS + WebGL

· As part of CS184 at UCB, built a **real-time n-body simulation** in three.js and WebGL.
· Includes live depictions of gas clouds coalescing into stars orbiting around a black hole in the center of a disk galaxy. User can customize the number of galaxies, opacity of materials; adjust the gravitational strength; choose from various cubemap backgrounds; and use camera controls form pan and zoom across the scene.
· The project is live with a full report at: https://aparikh98.github.io/CosmologicalSimulation/

NBA Award Predictor via Machine Learning Algs 700+ Lines, Python

· Using data from basketball-reference.com, scraped NBA award and statistical data from 2000-2019.
· Created train-test data through splitting with various levels of cross-validation. Then, **applied 5 different Machine Learning models** to train and test results (Linear Reg, Lasso/Ridge Reg, Linear Support Vector Reg, Decision Tree Reg, Gradient Boosting).
· Accuracy varied from 74-82% overall, results live on https://github.com/tanmayghai18/NBA-MVP-Predictor

Protein Structure Reconstruction w/ Electron Microscopy 1000+ Lines, Python

· Using Fourier transform theory and the backprojection algorithm, **reconstructed 2D zika virus** images to **create a 3D interactive visualization**.
· Collaborated with CS, Math, and Biology students from UC Berkeley; wrote a final report which is published on my website at https://tanmayghai18.github.io/data/Math_127_Project.pdf

TECHNICAL SKILLS

Programming Languages	Python, Java, C++, MySQL, Javascript, Matlab, LaTeX, MySQL, Scala, React, HTML, CSS
Frameworks	TensorFlow, PyTorch, Spring, SpringBoot, Apache Kafka, ELK Stack
Operating Systems	MacOS, Linux, Windows
Interests	Sports (basketball and tennis), Hindi music, traveling, debate