Tanuj Dave

tanujdave075@gmail.com
(708) 830-4366
LinkedIn, GitHub

EDUCATION

University of Illinois at Chicago, Chicago, IL **May 2025**
Master of Science Computer Science

Relevant Coursework: Neural Networks | Object-Oriented Languages and Environments

University of Illinois at Chicago, Chicago, IL **May 2023**
Bachelor of Science Computer Science ***Magna Cum Laude*** (GPA 3.83)
Dean's List for 7 Semesters

Relevant coursework: Cloud Computing | Artificial Intelligence | Machine Learning | Data Science | Systems Engineering | Advanced Data Structures and Algorithms | Software Design/Engineering

EXPERIENCE

Associate Back End Engineer, Chicago, IL July 2023 – August 2023
CADA, UIC

- Maintained and developed university wide websites and servers.
- Enhanced functionality and provided critical support during server migration.
- Performed daily security checks and ensured functionality and compatibility across browsers and devices.
- Maintained user accounts and delivered end-user training and support.
- Collaborated with cross-functional teams and provided round the clock support.

Software Engineering Intern, Chicago, IL May 2022 – August 2022
Continental AG

- Project: Asynchronization of the telematics FOTA (firmware-over-the-air) updates, proposed a proof of concept to the team.
- Developed a prototype individually withing 3 months that parallelizes the update process and uses the proprietary ECU embedded system architecture to optimize multi-processor components updates. Handled errors, timeouts, shutdowns and used them to further optimize the workload, update routines of the update agents and error reporting.
- Prototype saved 40% of time while updating both individual and multiple components distributed across the system.
- Learnt the proprietary system architecture and features like carrier communication, OTA update calls, automated testing etc.

Research Intern (Software), Chicago, IL January 2021 – May 2021
Rehabilitation Robotics Lab

- Developed a high frequency application using python and C++ to extract the data from 3-D motion-sensing equipment and simultaneously parse and store it while displaying a 3-D real-time visualization of the subject.
- Save the data onto the computer to analyze the overall range of motion and weaker range of motion to help amputees.
- Used pyBullet and Vicon DataStream in python to render a live 3-D humanoid, move humanoid using motion capture data and pandas. Used UDP/TCP communication to bridge the communication between the Vicon motion capture and the application.

Computer Science Teaching Assistant, Chicago, IL January 2022 – present
Computer Science Department, UIC

- Subjects: Data Structures and Algorithms, Computer Design, Intro to Programming
- Conducted oral exams (technical interviews)
- Leading labs and projects to help students grasp crucial programming and logical concepts.

Computer Operations, Chicago, IL March 2021 - May 2023
CADA, UIC

- Used Microsoft Server to administer and maintain Active Directory for the University
- Write, test, and operate scripts for automated installations and entry-level computer programs.
- Built and maintained macOS and Windows machines for the university.

SKILLS

Languages: C++, Python, Java, C, Ruby, Scala, F#, JavaScript.

Development: Apache Hadoop-Spark, RESTful services, AWS, IoT, Wi-Fi, Clustering, MVC, gRPC, RPC, microservices, Pandas, pytorch, sklearn, NumPy, Android development, Linux, Docker, R programming, SQL, git, UML, Jira, Agile development, HTML, CSS, Drupal, WordPress, Windows Server 2011/2022, SSL, Cloud Computing, Embedded Software, Telematics, Automated testing, ML/AI, Containerization, Distributed Systems.

MAJOR PROJECTS

- **Animal Classification using Neural Networks:** A simple GUI application built in python that uses a Neural Network to classify any image (of any dimensions) into one of 90 animals. Ongoing personal project, using ReLu, SGD, backpropagation, and building a convolution network. Prospective: use Adams optim. and dropoutput.
- **Breast-Cancer Analysis and Prediction:** Several Machine learning models developed in python that take as input the patient's cancer mass attributes and provides a detailed visualization, statistical analysis and uses machine learning to analyze the patient's type of cancer along with a tendency prediction.
- **Digit classification using Neural Network:** A 784-10 Neural Network that uses the Multicategory Perceptron Training Algorithm over 60000 28x28 images to classify digits. Additional analysis of the MPTA and the NN performed by modifying several training parameters like the learning rate, error threshold, number of iterations etc.
- **RESTful Interval Search service:** A RESTful AWS Lambda function that finds the injected string and the time-interval in a log file in O(log(N)) complexity. Used gRPC server deployed in AWS EC2 and a gRPC client to optimize the communication and decrease the latency.
- **Cloud Computing organization:** Simulated multiple datacenters that run jobs sent by simulated clients. A cloud simulator using a software package Cloud2SimPlus that models cloud environments and operates different cloud models. Used several scheduling policies like Round Robin, different data center host structures and VM policies.
- **Multiplayer Sessions Android Tic-Tac-Toe:** A multiplayer tic-tac-toe that supports up to 8 players per session. Multithreaded GUI and backend server that maintains several player sessions, developed using Java on Android Studio and C++. Used the multi-server client model that enables users to play a multiplayer version of Tic-Tac-Toe with their friends over the internet using their Android device.
- **Distributed Recording and DJ booth**: A distributed embedded system that used 4 Arduinos and 4 Wi-Fi modules that use IoT clustering over Wi-Fi to transfer live recording data and update the state to enable recording voice, control, music output and add beats to the music (Each Arduino for a function) to implement a Recording and DJ booth.
- **Autonomous Parking and Driving Bot:** Robot car and software made using Arduino Uno and HC-SR04, that senses its surroundings and drives itself tackling obstacles.

ACTIVITIES

Google Developer Students Club UIC, Chicago, IL August 2023
Member

Chicago Triathlon, Chicago, IL August 2022
Participant/Finisher

- Participated and completed the Chicago 2022 Triathlon Supersprint consisting of swimming, bicycling and marathon demonstrating endurance, determination, goal setting and resilience.