Kamran Majid

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Education

- **University of Illinois Urbana-Champaign** — Champaign, IL
  Bachelor of Science in Computer Science, Dean's List — *Expected Graduation, May 2024*
  - **Relevant Coursework**: Data Structures, Discrete Structures, Linear Algebra with Computational Applications, Software Design Lab, Probability and Statistics for CS, Intro to Computer Systems, Intro to Robotics, Ethical Theories, Minds and Machines, Mobile Robotics for CS, Theory of Knowledge, Intro to Algorithms and Models of Computation, Artificial Intelligence, Advanced Symbolic Logic, Programming Languages and Compilers, Intro to Quantum Computing

Experience

- **Software Engineering Intern** — Redmond, WA
  SpaceX — *January 2024 - August 2024*
  - Created a toolset to optimize the Starlink ground network
  - Wrote simulation algorithms to prioritize our low-latency ground assets

- **Software Engineering Intern** — Plano, TX
  Capital One — *June 2023 - August 2023*
  - Built and productionized an end-to-end alertion system using statistical methods to detect data anomalies
  - Integrated machine learning as a service within internal data pipelines

- **Software Engineering Intern** — Washington, DC
  NASA Headquarters — *June 2022 - December 2022*
  - Worked on the GDC mission concept; a constellation of spacecraft to observe space weather processes
  - Built data engineering tools to consolidate infrastructural data and perform predictive analyses

- **Research Intern (REU)** — Urbana, IL
  National Center for Supercomputing Applications — *June 2022 - August 2022*
  - Conducted massive-scale integrated predictive simulations to assess and improve scramjet designs

- **ML Undergraduate Researcher** — Urbana, IL
  University of Illinois Urbana-Champaign — *November 2021 - May 2022*
  - Worked on the forward kinematics and an LSTM learning model for a soft robotic arm

Projects

- **Data Augmentation Pipeline**: Created a data augmentation pipeline which takes in images of various formats and performs complex random augmentations on them (C++, Boost, OpenCV, Linux, VS Code).
- **Airport Pathfinding**: Developed a program that uses Djikstra's to find the shortest path between two airports and PageRank to find the most important airports based on user input.(C++, Linux, VS Code).
- **Spot Nano**: Reverse engineered Boston Dynamics' "Spot" robot. Utilized an augmented random search agent and a custom inverse kinematics model (Python, Google Colab, NumPy, Matplotlib, OpenAI).
- **DecARate**: Used a DCNN to detect architectural style; recommends halloween decoration layouts that fit your home. (Python, Google Colab, TensorFlow, FastAI, Figma).
- **CustomVent**: Developed a custom deep neural network architecture to take in commonly collected patient data and used it to determine the optimal nozzle diameter for cheap and customizable ventilator splitter variations. Created a mobile application to streamline printing processes (Python, Figma, Google Colab, Keras, Scikit-learn).

Skills

- **Programming**: Python, Javascript, Java, C++
- **Frameworks**: React, Flask, Node, Bootstrap JS, Numpy, Matplotlib, TensorFlow, Keras, Boost, OpenCV
- **Tools**: PyCharm, Selenium, Visual Studio Code, Figma, GoHugo
- **Platforms**: Linux, Azure, AWS, GCP, Snowflake, Splunk, ROS, Arduino, Raspberry Pi
- **Languages**: English, Spanish, Urdu, Arabic
- **CAD/Simulation**: OpenRocket, Autodesk CFD, SolidWorks, Inventor Pro, Fusion 360, OnShape

Awards

- **Hackathons**: 2nd Place /687 at Yale, 1st Place Overall /131 at CodeHax, 3rd Place Overall /159 at MLH Hack-o-Lantern.
- **Robotics**: 2x TSA Robotics State Champion, Vex World Championship and US Open Qualifier