

SHASHWAT RAJ

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Education

Arizona State University

2023-2027

B.S.E. in Computer Systems Engineering + B.S. in Mathematics (Dual Major), GPA : 3.79/4.0

Tempe, Arizona

Activities : GCSP, Venture Devils, ACM@ASU, Hacker Devils, Fulton Undergrad Research Initiative (FURI), LENS lab

Awards : Dean's List Fall'23, Spring'24, Spring'25; NAmU Scholarship \$13500/yr; 2024-25 Go-Global Scholarship of \$3000

Experience

WoofCare Solutions Pvt. Ltd.

May 2025 – Present

Founder & CEO

Delhi, India

- Developing a mobile app using Flutter + Firebase + a Python backend, connecting dog lovers & dog care services to improve lives of stray dogs in India. Project funded by EPICS (Engineering Projects In Community Service) at ASU.
- Integrated Google's Admob & Apps API to facilitate seamless location-based services & crowdfunds, partnering with over 60+ local and large NGOs in Pune, India including Voice of Stray Dogs (VOSD) and Dogs Friendly Pune.

Collective Design (CoDe) lab, Arizona State University

May 2024 – Present

Machine Learning Developer and Researcher

Tempe, Arizona

- Developing Reinforcement Learning techniques to optimize Earth science missions to autonomously determine priority observations in space, under the mentorship of Dr. Paul Grogan of SCAI Faculty at ASU.
- Co-authoring a review paper discussing relation between OSSEs & Mission Engineering.
- Trained DQN and QRDQN models using Pytorch, GeoPandas, TAT-C, Seaborn on NASA's Geos5 dataset, achieving 67.00% precision and 87.00% recall resp. Receiving total \$4600.00 through FURI and GCSP Research funding.

MentorU

July 2025 – August 2025

Product Development Manager

Los Angeles, California

- Managed/Led a team of 5 developers developing a full-stack online platform for college admission counseling startup, to automate features like scholarship finder and personal story-building. Increased UX Research success by 150%.

Projects

Whatrobe | React, Cloudflare Workers (Databases, buckets, vectorize, AI) | [mywhatrobe.vercel.app](#)

November 2023

- A web app that recommends personalized outfit based on your entire wardrobe for any occasion, using Cloudflare AI. Uses Cloudflare Workers for backend, including AI models, SQLite databases, Object Storage, and Vector Embeddings.

Kavvy | spaCy, Python, OpenAI Web Search, Pytorch, Next.js | [kavvy.vercel.app](#)

Present

- A linkedin-like platform that connects writers to traditional publishers. Curated a data consisting of 626 publishing houses in the US and 17942 published authors to find trends that best fit a budding writer match the suitable publishing house.

Numericle | React, Firebase) | [numericle.space](#)

November 2023

- Daily puzzle game inspired from Wordle, to guess math sequence and patterns. 250+ users within just 2 days of release.

Tansen | Flutter, FastAPI, PyTorch, Huggingface, Tensorflow, Transformers | [github.com/darthvader58/tansen](#)

Present

- A web app where musicians instantly get lessons and notes for any music piece and any known instrument through music transcription & AI suggestions via Onsets & Frames, Demucs and Basic Pitch, trained over 20000+ MP3 & MIDI files.

Formath | React, Node, Express, CockroachDB, Cloudflare Workers, OpenAI, AWS | [formath.vercel.app](#)

October 2023

- A web app that analyzes step-by-step math solutions from uploaded images, identifies errors, and provides feedback. Integrates Mathpix for LaTeX conversion, WolframAlpha for analysis, and Imgur API for OCR, ChatGPT for feedback.

KCAVO | Kubernetes, KubeCTL, GoLang | [github.com/darthvader58/kcavo](#)

October 2025

- A kubectl or Kubernetes Command Line Tool based plugin that visualizes resources, analyzes costs, and provides optimization recommendations.

pip-race | Rust, Redis, ONNX, Docker, PyTorch, Express, React | [github.com/darthvader58/pip-race](#)

October 2025

- A real-time F1 race strategy library using QR-DQN to predict pit-stop decisions (0.87 AUC-ROC) and a Rust-based ML inference service delivering sub-50 ms latency, with live telemetry via WebSockets and Redis CLI, trained on FastF1 data.

Mean Bean Machine | SystemVerilog, FPGA, Vivado | [github.com/darthvader58/MeanBeanMachine](#)

November 2025

- An FPGA implementation of the famous 1990s video game - Dr. Robotnik's Mean Bean Machine. Programmed on NEXYS A7100T board, using 5 switches, a VGA output for game screen and 7-segment display for viewing the score.

Knockscript | Ruby, Compiler Design, Typescript | [knockscript.up.railway.app](#)

October 2025

- A programming language based on Knock-Knock jokes, built in Ruby, along with a serverless web-compiler.

Other Projects and Publications listed on Github profile, Linkedin and Portfolio Website

Technical Skills and Other Interests

Languages: Python, Java, C, C++, HTML/CSS, Dart, MySQL, LaTeX, React.js, Node.js, Go, Next.js, Ruby, CUDA, Lua, R, Matlab, Bash, Verilog, VHDL, Visual Basic, MIPS Assembly, Perl, Swift

Technologies/Frameworks: PyTorch, Django, Flask, FastAPI, Redis, OpenCV, Keras, Scikit Learn, Pandas, TAT-C, Git, GitHub, Tensorflow, Tailwind, Flutter, AWS, MongoDB, Firebase, CockroachDB, XGBoost, Numpy, Docker, Kubernetes, Matplotlib, KiCad, IoT, Arduino, ROS, FPGAs, Seaborn, Gazebo, Admob, Ansys, GraphQL, OpenGL, WebGL, Vulkan

Hobbies: Flute, Battlebots, Boxing, Digital Art, Comp. Prog., Cricket, Basketball, Chess, Podcast host of "Write It Out"

Other Courses & Certifications listed on Linkedin