

KUSH VASHISTH

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EDUCATION

University of Southern California
Master's, Computer Science

January 2024 - December 2025
GPA: 3.7

PROFESSIONAL EXPERIENCE

University of Southern California

Los Angeles, CA, USA

Teaching Assistant / Advanced Mobile Devices & Games

January 2025 - Present

- Selected from a class of 90 students as a Graduate Teaching Staff Member for CSCI 526: Advanced Mobile Devices and Game Consoles at the University of Southern California
- Delivered technical lectures on advanced topics in mobile and console game development
- Developed detailed rubrics for assignments and projects, ensuring fair and structured evaluation
- Oversaw grading of project phases (Alpha, Beta, and Gold) and conducted progress checks

Graduate Research Assistant

September 2024 - Present

- Conducted research on soft robotic modeling by integrating physics-based simulations with data-driven methodologies, leading to enhanced robotic performance and adaptability
- Designed and implemented a vision-based motion tracking system using depth cameras to capture real-time robotic movements, enabling precise data analysis and model training for improved robotic control

MBA & Beyond

Singapore

Software Engineer Intern

February 2022 - June 2022

- Engineered and deployed a SailsJS-based application to optimize the B-school application process, reducing response times and enhancing consultant efficiency
- Revamped and maintained the company's website on Squarespace, improving user engagement through intuitive UI/UX design and seamless navigation
- Integrated user tracking tools in collaboration with the analytics team, enabling data-driven insights that enhanced website performance and user experience

PROJECTS & OUTSIDE EXPERIENCE

Mirror Mirror - 2D Puzzle Platformer Game

Mechanics & Level Designer

- Designed and implemented gameplay mechanics in C# using Unity
- Developed intricate level designs requiring cooperative puzzle-solving, gravity shifts, and mirrored world navigation.
- Utilized Unity's physics engine to create responsive platforming mechanics, interactive objects, and synchronized two-player movement.
- Conducted iterative playtesting and balancing, analyzing player interactions using data-driven insights to refine gameplay experience.
- Collaborated with a multidisciplinary team to create a polished, engaging co-op experience with smooth animations and intuitive progression.
- [Link to project](#)

Workly

- Developed "Workly," a full-stack remote work productivity web application using Next.js, Firebase, Node.js, WebSockets, and WebRTC, enabling real-time collaboration, task tracking, and video calling features.
- Implemented real-time team updates and notifications with WebSockets, ensuring seamless communication and instant task status updates among users.
- Integrated a video calling feature with WebRTC, allowing users to initiate calls via email, receive incoming call notifications with accept/reject options, and establish peer-to-peer connections with ICE candidate handling.
- Built a responsive and user-friendly interface using Tailwind CSS for components like Pomodoro Timer, Task Tracker, Team Updates, and Video Calls, improving user engagement and productivity.
- [Link to project](#)

Image Classifier Using Transfer Learning

- Engineered a high-accuracy image classification model using transfer learning to categorize six distinct scene types effectively.
- Enhanced model generalization by implementing advanced data preprocessing and augmentation techniques, including resizing, zero-padding, cropping, flipping, and contrast adjustments.
- Leveraged state-of-the-art pre-trained architectures such as ResNet50, EfficientNetB0, and VGG16, fine-tuning final layers to achieve optimal performance on a limited dataset.
- Applied advanced regularization techniques—L2 regularization, dropout, and batch normalization—alongside the ADAM optimizer to prevent overfitting and improve model stability.

CampTech (Initiative)

- Assembled and led a cross-functional team of 9 members, combining teaching and management to execute educational initiatives
- Organized and facilitated monthly workshops, enrolling close to 80 students in interactive sessions on Web Development, App Development, Machine Learning, Blockchain, and other emerging technologies
- Spearheaded curriculum design for 8-session workshops, ensuring high-quality content delivery and hands-on learning experiences

SKILLS

Skills: Git, HTML/CSS, Python, Node.js, AngularJS, React.js, Keras, Scikit-learn, LLM, MongoDB, SQL, C/C++, Java, Data Science, Django, AWS, Linux/Unix