Phone : +713 204 5173
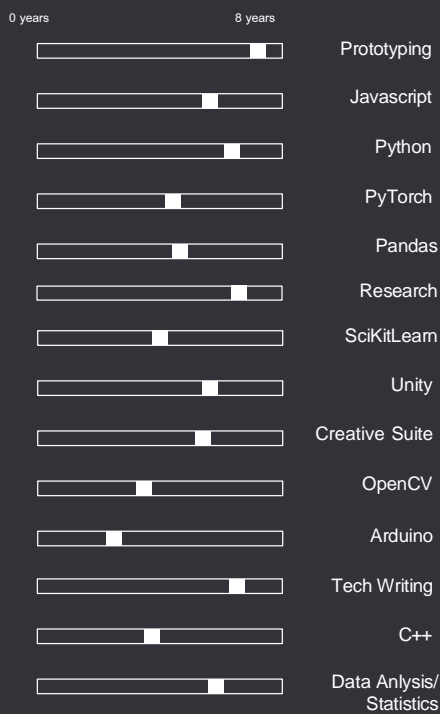
E-mail : hello@joshurbandavis.com

Web : www.joshurbandavis.com

Location : San Francisco, California, USA

EDUCATION

PHD: COMPUTER SCIENCES
2023 - Dartmouth College

SKILLS

0 years	8 years	
		Prototyping
		Javascript
		Python
		PyTorch
		Pandas
		Research
		SciKitLearn
		Unity
		Creative Suite
		OpenCV
		Arduino
		Tech Writing
		C++
		Data Anlysis/ Statistics

The scale depicted indicates the range of expertise for each skill, spanning from 0 to 8 years of experience

PATENTS

(Calliope) A System for Supporting Human-AI Collaboration in Virtual Environments. Josh Urban Davis, Fraser Anderson, George Fitzmaurice. (Pending, No. 076/0301)

(Circuit Style) A System for Peripherally Reinforcing Best Practices in Hardware Computing. Josh Urban Davis, Jun Gong, Xing-Dong Yang (No. 62/916,977)

(TangibleCircuits) A System for Converting Circuit Diagrams to Tangible and Audio Interfaces. Josh Urban Davis, Xing-Dong Yang (No. 61/030,441)

JOSH URBAN DAVIS

EXPERIENCE AND SELECT TECHNICAL PROJECTS

META | REALITY LAB| Research Scientist | 2024 - Present

• Research, design, and develop computer vision and machine learning algorithms for light estimation and virtual object rendering applied to AR, VR, and MR.
• Research, design, and develop applied color perception algorithms for camera and AR applications
• Develop camera calibration and image processing algorithms.
• Implement and support large dataset generation and processing for algorithm development (AI/ML) in new technology explorations.
• Work with cross-functional teams and provide leadership and expertise for new project development and productization.

MEDIA AUGMENTED VIDEO CONFERENCING
ADOBE RESEARCH | Research Intern | 2021-2022

• Led the development of a cutting-edge media augmented video conferencing system that leveraged gesture and speech detection to deliver immersive experiences in a mixed-reality environment. Utilized a powerful stack including Javascript, MediaPipe, and OpenCV to independently prototype the system.
• Designed and executed comprehensive mixed-method qualitative and quantitative studies involving 46 users to gather valuable insights and user feedback. Effectively presented the study results to key stakeholders within the company, translating research findings into actionable recommendations.
• Published research findings in peer-reviewed proceedings, showcasing a commitment to contributing to the scientific community and advancing knowledge in the field of human-computer interaction.

MIXED-REALITY MASK | MICROSOFT RESEARCH | Research Intern | 2020

• Developed and implemented an interactive mask using a smartphone to display real-time video of the user's mouth and nose on the mask's surface.
• Created real-time mapping techniques to ensure accurate and distortion-free visualization.
• Fostered collaborations between research team and commercial partners to transition prototype into a marketable product.
• Published the mask design in peer-reviewed proceedings (http://hdl.handle.net/10125/79732)

GENERATIVE AI FOR AUTHORING 3D GEOMETRIES IN VR
AUTODESK RESEARCH | Graphics Research Intern | 2020

• Spearheaded collaboration with the Machine Learning, HCI/Graphics, and Generative Design research teams to pioneer cutting-edge techniques for generating 3D objects. Leveraged state-of-the-art technologies such as GANs, Transformers, and Autoencoders to develop innovative solutions.
• Prototyped and deployed interactive generative adversarial networks (GANs) specifically tailored for 3D design tasks in virtual reality. Utilized a powerful tech stack including pyTorch, Pandas, Numpy, and Unity to create immersive and user-friendly generative AI authoring experiences.
• Recognized for intellectual contributions and innovation by securing a patent for virtual reality interaction techniques and system design. Published technical paper in prestigious, peer-reviewed science proceedings. (doi.org/10.1145/3450741.3465260)

RESEARCHER | Dartmouth Computer Sciences | 2019 - 2024

• Developed advanced inductive sensing systems capable of accurately distinguishing between various objects by utilizing ensemble learning techniques.
• Established strategic partnerships with the Kelley Center for the Blind to implement technologies which enabled visually impaired users to access electrical engineering and STEAM education.
• Played an integral role in grant writing efforts and contributed to the publication of 14 technical papers in peer-reviewed journals and proceedings. Recieved 4 best paper awards for outstanding research.

BRAIN COMPUTER INTERFACE FOR MUSIC GENERATION | 2018

Collaborated with Geisell School of Medicine to prototype and deploy a Brain-Computer Interface (BCI) system that mapped functional magnetic resonance imaging (fMRI) data to electroencephalogram (EEG) signals. Developed hyperalighnment and signal processing techniques to enable the isolation of psycho-acoustic music recall, allowing users to generate small melodies through their thoughts.