David Nash

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EDUCATION

TEXAS A&M UNIVERSITY
Aug 2015 - Dec 2019

Degree: B.S. Multidisciplinary Engineering Technology
Major: Mechatronics
Minor: Embedded Systems
GPA: 3.26

EXPERIENCE

Air Force Research Laboratory
Jul 2019 – Aug 2019

Software Engineer Intern
- Developed software for a web-based Virtual Reality toolkit that is actively being developed within AFRL at Wright-Patterson AFB.
- Added the capability for multi-user VR experiences by establishing a peer-to-peer connection between users using WebRTC via peer.js for low-latency VR collaboration.
- Created an interactive and visually intuitive way to set design constraints in a virtual environment for 3D structural analysis.

M²AESTRO Research Laboratory
May 2018 - Present

Undergraduate Researcher
- Developed a finite element analysis program in Unity that utilizes interactive environments and performs real-time calculations in VR.
- Received $30K in funding to supplement the STEM classroom experience by utilizing VR for teaching concepts.
- Utilizing A-Frame and web-based VR to create hardware agnostic scenes that supplement the education experience.
- Collaborating with other researchers to visualize their scientific data such as 3D scans, 3D models, and point cloud data.

Mechatronics Senior Design
Jan 2019 - Present

Project Manager
- Designing a mixed reality capture system which records professors teaching in VR and allows students to view the captured content in mixed reality.
- Developing a virtual environment that serves as a classroom where professors can import 3D models, draw in the environment, and create compelling visuals to enhance STEM education.
- Responsible for overseeing and executing all stages of the design while ensuring shared accountability for each team member.

PROJECTS

Electromyography Robotic Vehicle
Sep 2018 – Dec 2018

Mechatronics Engineer
- Created a robot that was controlled using an EMG signal gathered by electrodes placed on the arm muscles of a user.
- Responsible for creating analog amplification and filtering circuits to attain a useable signal for digital processing.
- Implemented digital signal processing and logic for output states using LabVIEW with analog-to-digital signal processing techniques.

SCUTTLE Bot
Jan 2019 – May 2019

Mechatronics Engineer
- Created an autonomous robot that was capable of transporting a 50-pound payload while avoiding obstacles.
- Implemented computer vision tracking with Python and a webcam which allowed the robot to find and follow specific objects.
- Integrated a BeagleBone Blue MCU, MATLAB, Python, and various sensors to successfully avoid obstacles, track objects, and maneuver the robot autonomously.

SKILLS

Proficient: Virtual Reality Development, Embedded Systems Software, Electromechanical Systems, Modern IDEs, Mechanical Design, Unity 3D, Python, C#, C, Teamwork, Leadership, Optimism.

Familiar: JavaScript, HMTL, C++, C, React Native, Swift, Three.js, Node.js, A-Frame, LabVIEW, MATLAB, Source Control, Web Development, Artificial Intelligence, Computer Vision, Mobile Development, Entrepreneurship.