

# PETE FAN

## Electrical and Computer Engineering

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github.com/PaperFanz

paperfanz.github.io

## EDUCATION

### B.S. Electrical and Computer Engineering

#### University of Texas at Austin

Aug 2018 - May 2021

GPA: 3.91

Relevant Coursework: Computer Architecture, Embedded Systems, Operating Systems, Digital Logic Design, Algorithms

## PROFESSIONAL EXPERIENCE

### Undergraduate Research Assistant

#### Nuclear and Applied Robotics Group

April 2019 - Present

Austin, Texas U.S.A.

- Architected an IoT - Robotics integration project to extend onboard sensors with networked embedded systems for greater operational autonomy and hardware redundancy
- Ongoing work on a situational awareness package using ROS Nodelets and OpenCV to provide remote operators with context-aware visual feedback
- Co-authored a paper on intuitive remote teleoperation leveraging VR motion sensors and affordance templates
- Participated in an intercontinental teleoperation demonstration between UT Austin and Woodside Energy (Perth, Australia)
- Created and tested a virtual reality dual manipulator jogging scheme using the HTC Vive motion controller system
- Conducted feasibility analysis on next-gen ROS networking solutions including 10G fiber tether, WiFi 802.11ax, and 5G modems

### Teaching Assistant

#### Introduction to Computing (UT ECE Dept.)

Aug 2019 - Dec 2019

Austin, Texas U.S.A.

- Created an IDE-like extension for Visual Studio Code for LC3 assembly language, including syntax highlighting, autocomplete, and snippet support: [PaperFanz/lc3-assembly-vscode-ext](#)
- Developed an accompanying assembler with extended pseudo-op features and cross-file assembly in C: [PaperFanz/laser](#)
- Wrote homework and test questions on logical circuits and LC3 datapath/assembly

### NanoExplorer Scholar

#### Human Enabled Robotics Lab

June 2016 - July 2018

Richardson, Texas U.S.A.

- Developed a motion smoothness measurement algorithm for use in a robotic surgery training system using C++, OpenGL, and ROS
- Designed and conducted human subject study assessing effectiveness and robustness compared to existing measures
- Maintained Linux machines used by the HERo Lab, primarily Ubuntu 16.04 and 18.04

## TECHNICAL SKILLS

System Design Computer Architecture  
Operating Systems Motion Controls  
Virtual Reality Computer Vision  
Embedded Software Circuit Design  
CAD

## PROGRAMMING

C/C++ Python ROS/ROS2  
OpenCV Java Rust QT5  
Javascript/Typescript HTML/CSS  
Verilog R MATLAB LaTeX

## SOFTWARE

Linux Visual Studio Code Git  
Keil uVision 5 Xilinx Vivado R Studio  
MATLAB Fusion 360 EasyEDA

## REFEREES

### Dr. Mitchell W. Pryor, Ph.D

Research Scientist

University of Texas at Austin

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### Dr. Ramesh Yerraballi, Ph.D

Professor of Instruction

University of Texas at Austin

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## PUBLICATIONS

### Conferences

- Pettinger, Adam et al. (2020). "Reducing the Teleoperator's Cognitive Burden for Complex Contact Tasks Using Affordance Primitives". In: *International Conference on Intelligent Robots and Systems. IROS 2020*. (Las Vegas, NV, USA, Oct. 25-29, 2020).