Zhirui Dai

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EXPERIENCE

Statistical Visual Computing Lab   06/2020 - current
  Advisor: Nuno Vasconcelos, Professor, ECE Department, UCSD
  - Designed deep learning model for medical image processing to provide qualitative and quantitative cancer risk diagnosis
  - Developed a hybrid system of conventional algorithm and deep learning model for recovering 3D geometry from monocular images
  - Designed deep learning network for better crowd counting with surveillance systems

Advance Robotics And Controls Lab   01/2020 - 06/2020
  Advisor: Michael Yip, Professor, ECE Department, UCSD
  - Improved performance of MPNet, a neural path planner
  - Designed tissue model for surgical robot system development

Autonomous Vehicle Laboratory of Cognitive Robotics, UC San Diego   10/2019 - 01/2020
  Advisor: Henrik I. Christensen, Professor, Computer Science & Engineering Department, UCSD
  - Developed Linux container tools for autonomous vehicle software deployment

Camel Microelectronics, Inc. San Jose, CA   07/2017 – 06/2019
  Advisor: Fei Ye, CUSPEA scholar
  - Developed IDE for embedded software development
    - User Interface design and programming
    - Hardware abstract layer library which provides users APIs to interact with modules on SoC
    - ELF analyzer and converter which generates Assembly/C/C++ program files for bare-metal SoC
  - Debugging SoC and developed software hotfix for hardware defects

Physics Experiment Teaching Lab, Fudan University   01/2016 - 07/2019
  Advisor: Yongkang Le, Professor, Department of Physics, Fudan University
  - Developed an ultrasonic flow speed measurement experiment instrument
  - Developed self-balancing system with PID controller
  - Developed instrument locating system based on RFID

Second Affiliated Junior School of Fudan Univeristy   01/2019 – 07/2019
  - Taught students to program Arduino

EDUCATION

University of California, San Diego, Electrical & Computer Engineering, Master, GPA: 4.0/4.0   09/2019 - current
  - Expected Graduation: June 2021

Fudan University, Shanghai, China, Physics, Bachelor of Science, GPA: 3.44/4.0   09/2015 – 06/2019
  - Excellent Graduated Student Award

Humboldt Universität, Berlin, Germany, Computer Science, Exchange, GPA: 3.71/4.0   04/2018 – 08/2018

SKILLS

- **Programming**: C/C++, Python, Assembly, Verilog, Swift, Java, Shell Script, HTML, CSS, Javascript
- **Software**: AutoCAD, SolidWorks, MATLAB, Mathematica, Quartus
- **Hardware**: FPGA, STM32, Arduino

HONORS & AWARDS

- Excellent Graduated Student Award   06/2019
- Scholarship for Outstanding Students at Fudan University   12/2018
- Scholarship for Outstanding Students at Fudan University   12/2017
- 2017 Hornors Student Award in Physics   07/2017
- Xu Zeng-shou Scholarship   12/2016
- The first prize of China Undergraduate Physics Tournament(CUPT)   08/2016
- The champion of Shanghai Undergraduate Physics Tournament(SUPT)   07/2016