Terence Zeng

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Education

University of Illinois Urbana-Champaign Expected Graduation Date: December 2025

Bachelor of Science in Computer Engineering, Minor in Mathematics

- **GPA**: 4.0 (Dean's List, James Scholar, Robert E. Lepic Electrical Engineering Scholarship)
- **Relevant Coursework**: Data Structures, Algorithms and Models of Computation, Computer Systems and Programming, Artificial Intelligence, Digital Systems Laboratory(FPGA), Digital Signal Processing

Experience

Computer Engineering Intern May 2024 – Present

Midea

- Utilizing embedded systems for microcontrollers to improve functionality of various consumer appliances
- Prototyping circuit designs and formulating patents in the research and development department

Intern July 2023

Guotai Junan Investments

- Automated analytical parsing of incoming options trading data to assist with decisions, saving approximately 90 minutes every week
- Integrated tools such as Python, OpenPyXL, Pandas, and BeautifulSoup with internal email system

Course Assistant, ECE 120 (Introduction to Computing) January 2023 – May 2023

ECE Department, University of Illinois Urbana-Champaign

- Graded students' assignments and provided feedback on clarity and accuracy of solutions
- Worked with TAs and professor as a team to assist students in developing computing skills

Projects

Real-Time Speech Vocoder on FPGA | *SystemVerilog, Vivado*

- Designed a vocoder on a Spartan-7 FPGA, modifying and pitch-shifting speech with approximately a 100ms delay
- Calculated coefficients for band-pass FIR filters, then programmed modulation of sine waves
- Converted 1-bit microphone input from pulse-density modulation format to 8-bit pulse-code modulation, then to pulse-width modulation

Website Portfolio | *HTML, CSS, JavaScript*

- Utilized HTML, CSS, and JavaScript to create website featuring projects and experience
- Includes resolution-adaptive image gallery with transitions, light/dark mode switch, popup boxes, etc.

Machine Learning Facial Analysis Displayed on LED Matrix | *TensorFlow, OpenCV, Google MediaPipe*

- Consolidated microcontroller, LED system, and programs to develop project for Engineering Open House
- Detects facial features and emotional state of subjects and displays infographic on an embedded LED matrix, using tools such as TensorFlow, OpenCV, and Google MediaPipe computer vision framework

Computerized Simulation of Binary Black Hole Trajectory | *NumPy, Matplotlib*

- Developed a Python (with NumPy, Matplotlib) program that simulated path of binary black hole system by calculating metrics such as energy and radii over time using data from LIGO observatory

Technical Skills

Languages: Python, SystemVerilog, C, C++, Java, JavaScript, HTML, CSS
Tools: Git, Linux, Vivado, Vitis, Visual Studio, Google Cloud, PyCharm, IntelliJ, Eclipse, Quartus, Docker
Libraries: PyTorch, TensorFlow, OpenCV, NumPy, MatPlotLib, Pandas, BeautifulSoup, OpenPyXL

Activities

- UIUC Competitive Math - ranked top 10 in UIUC undergraduate math contest
- Earthquake Engineering Research Institute - AutoCAD specialist, committee member
- Open-Source @ Illinois - Engineering Open House Project - hardware subteam
- Association for Quantitative Trading Education