

Yitong (Thomas) Shen

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SKILLS

Programming Languages	C/C++, Python 3, C#, JAVA, HTML, Processing, Matlab, Golang, R, OCaml
Operating System	Windows, Mac OS, Ubuntu, Cent OS, Raspberry Pi OS
Development Tools	Processing 3, MATLAB, IntelliJ, Android Studio, VMWare, Unity
Version Control Tools	GitHub, GitLab
Frameworks	React.js, Django, Flask, TensorFlow, OpenGL, CV2
Software Skills	Visual Studio Code, GDB, Marvel, Visual Studio 2019, Vim, CAD-Fusion

EDUCATION

University of Washington	09/2020 – Expected 03/2022
Master of Science in Technology Innovation	GPA: 3.82 / 4.00
University of Minnesota	09/2016 - 05/2020
Bachelor of Science in Computer Science	GPA: 3.62 / 4.00

ACADEMIC BACKGROUND

- Algorithms and Data Structures
- Operating Systems
- Artificial Intelligence
- Machine Learning
- Database Systems
- Program Design and Development
- Computer Graphics and Games
- User Interface Design, Implementation, and Evaluation
- Signal Processing
- Virtual Reality and 3D Interaction

PROFESSIONAL EXPERIENCE

Backend Developer, Internship **04/2021 – 08/2021**
MyInfluency Inc. Atlanta, Georgia, US

- Built a platform for local influencers to utilize their influence for small businesses.
- Collaborated with multiple cross-functional teams and delivered high-quality works.
- Troubleshoot a complex problem affecting the Django server that would not respond to Google Cloud Task.
- Inspected tasking queuing system and rewrote broken functionalities of Django server with Python3.
- Optimized the account login process to prevent users from duplicating logins.

Backend Developer, Internship **07/2018 – 08/2018**
China Mobile. Zhengzhou, Henan, China

- Evaluated developing CTI platform, tested critical features, and troubleshoot problems.
- Established the working environment in CentOS.
- Programmed simple client and server with given CTI interface in C and debugged the programs.
- Solved problems at their root and developed pragmatic solutions.

PROJECT EXPERIENCES

Portable Weather Station, Industrial Sponsored Project **06/2021 – 12/2021**

- Designed a portable weather station with a data transporting system for data collection in a group.
- Developed a system to control hardware and collect data on a microcontroller with Arduino and C++.
- Constructed a LoRa Mesh-Network by RadioHead Library for data transporting.

- Built a simple server on the desktop to receive and visualize data by Arduino and Python Flask Framework.

Smart Air Purifier, Faculty Sponsored Project

Spring 2021

- Designed a smart air purifier for academic research purposes with instruction of professors.
- Built air quality checking system and filter status checking system in group work in 2 months.
- Partnered with project managers, designers, engineers from different field.
- Designed main controlling system and constructed data logging system on Raspberry Pi in Python.
- Built IoT system on Raspberry Pi with Python and Microsoft IoT Hub.
- Established a database with Microsoft Azure and communication process between database and IoT device.

Web App, Course Project

Winter 2020

- Demonstrated the Internet data transferring and real-time object detection.
- Developed an online real-time video-based translator within 6 weeks.
- Revised a user interface with adding interactive elements like video in HTML, CSS and JavaScript.
- Programmed a Python Flask as backend server, constructed data transmission progress.

Malware Detection Web Application, Industrial Sponsored Project

09/2019 – 05/2020

- Designed, developed, tested, and deployed a server-based website checking system within a team.
- Established and optimized a webpage for presenting results in React.js with JavaScript and HTML.
- Built a RESTful API for frontend and backend communication in Golang.
- Created a honeyclient in Node.js and in thousand lines as the backend for analyzing potential malware.

Ray Tracer, Course Project

Fall 2019

- Illustrated basic computer graphics methods in C++, such as lighting, shaders, model pipelines, etc.
- Implemented the Phong Illumination Model, ray tracing calculation algorithm, color system, etc.
- Built basic vector system to create objects, implemented linear algebra calculation system for calculating lights.
- Constructed mesh and texture system, mapped textures on surface of objects.
- Introduced shading system and algorithms, calculated light with colors, shades, textures, etc.

Data Visualization Model, Course Project

Fall 2018

- Visualized earthquake data on an animated Earth model for learning and demonstration.
- Constructed texture system and data visualization algorithm.
- Created mesh calculating system, textured and rendered the sphere, and animated the sphere rotate.
- Imported data from public database and visualized data on the surface of sphere.

LEADERSHIP AND HONORS

2021 Microsoft Imagine Cup World Finalists

March 2021

Team member of Zephyr Air, one of the 40 finalist groups

Seattle, WA, US

Competitor of International Collegiate Programming Contest

November 2019

26th group out of 180 groups in ICPC 2019 North Central NA Regional Contest

Minneapolis, MN, US

Program Assistant of Global Gopher Academy

August 2019

University of Minnesota International Student and Scholar Service Office

Minneapolis, MN, US

- Organized, led, and instructed new students through orientation.
- Established friendly environment for new students in activities and events.

PUBLICATIONS

Qian Zhao, Dongbin Bai, Yue Yu, **Yitong Shen**, Nicholas Ames, John Raiti, Julian Marshall, and Yuntao Wang. 2021. *Making Healthy Air More Affordable: A Smart Air Purifier with Filter Availability Detection*. In *The 14th Pervasive Technologies Related to Assistive Environments Conference (PETRA 2021)*. Association for Computing Machinery, New York, NY, USA, 121–122.