Zack Nawrocki

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Summary

Experience in the fields of software engineering, data engineering, machine learning, blockchain technologies, and cybersecurity, as well as academia and industry research in relation to smart, efficient buildings, smart indoor thermal management HVAC algorithms, privacy, IoT, and smart lighting systems

Education

Rensselaer Polytechnic Institute (RPI) 2016 - 2020
Bachelor of Science in Computer Science, Concentrations: AI and Data, Systems and Software
Rensselaer Medal Award: the Medal, since 1916, recognizes superlative academic achievements and motivates students toward careers in science, engineering, and technology, guaranteeing $30,000 per year in scholarships.
Clubs: RPI Computer Science Club, Alpha Sigma Phi (Head of Philanthropy/Webmaster/Academic Advisor/Alumni Relations)

Experience

Spherical Analytics, *Software Engineer* May 2020 - Current

- Spherical Analytics integrates blockchain technology with big data ingestion, machine learning, and advanced analytics, to provide a strategic tool for environmental impact. This startup is a subsidiary of Context Labs.
- My work includes data ingestion, software development, machine learning for the purpose of analytics and processing big data, the creation of tools to assist with automation and writing software, projects tailored towards stakeholders, and data pipeline architecture management.

National Science Foundation - Lighting Enabled Systems & Applications, *Software Development Research Engineer* Jan. 2019 - May 2020

- Awarded a grant from the National Science Foundation to work on a project for the Lighting Enabled Systems & Applications Engineering Research Center, which is dedicated to developing autonomous intelligent systems, to address modern challenges in the connected environment.
- My project involved the area of autonomous HVAC control for smart buildings, in which I integrated occupant localization, optimized system controls, implemented and evaluated an integrated system for collecting user preferences, and worked on an efficient data-driven learning and MPC smart HVAC personalization algorithm, for cohabited work spaces.

Leidos, *Software Engineer Intern* May 2018 - Aug. 2018

- Originally the commercial cyber security division of Lockheed Martin, Leidos Cyber was acquired by Capgemini while working here in 2018
- Developed and tested for the Industrial Defender Automation System Manager (ASM) platform, a management platform that aggregates event and state data from industrial endpoints across all vendor systems in one location for a single, unified view of operations.
- Responsible for the development and implementation of a new feature in ASM 7.1, where asset licenses are automatically classified before being configured on the ASM, as well as QA testing of ASM, ASA, agents, network-based intrusion detection systems, and other components of the Industrial Defender ASM Solution.

Skills

Languages: C++, Python, C, Java, Processing, JavaScript, PHP
Skills: Agile, IoT, Software Engineering, QA, Machine Learning, Web Development, Artificial Intelligence, Data Science, Algorithms, ROS

Selected Projects/Publications

Co-authored Smart HVAC Publication
Achieving Improved Personalization and Energy Efficiency in Cohabited Work-spaces through Data-driven Predictive Control (https://par.nsf.gov/biblio/10186224), published and presented at the American Society of Engineer's Dynamic Systems & Control Conference 2020, studies the problem of indoor zone temperature control in shared work-spaces, equipped with heterogeneous heating and cooling sources, with the goal of increased energy savings and environment personalization.

TroyTutors.com
Creator of Troy Tutors, a platform which provides online tutoring services for computer science, math, engineering, and other related fields of studies, from tutors with RPI pedigree.

The Smart Conference Room Project
This collection of projects advances many research areas related to smart, efficient buildings, HVAC, IoT, and lighting, as well as breakthroughs related to ToF location-based temperature and lighting occupant satisfaction, pre-heating/pre-cooling energy-saving algorithms, autonomous meeting management, and lowering energy consumption in buildings.

Wyzant.com Tutor
In addition to tutoring on my own tutoring platform and in person, as a volunteer in my local community, I sometimes tutor people, of all ages and education levels, in computer science and mathematics on Wyzant.com. My tutoring profile, bio, ratings, and reviews can all be found at https://www.wyzant.com/Tutors/zachary.

Conferences

Presenter at Dynamic Systems and Control Conference 2020, *American Society of Mechanical Engineers* Oct. 2020
Selected by the American Society of Mechanical Engineers to present a co-authored publication at DSCC 2020.

Speaker at "How do we get to SMART Cities?" Conference, *Rensselaer Polytechnic Institute* Apr. 2020
Conference speaker, participated in presentations, poster sessions, and demos related to HVAC and IoT discoveries (the event was initially postponed due to COVID-19)

Presenter at Beyond Illumination: IoT, AI, Machine Learning, and Autonomous Systems that Think Conference, *The LESA Center* Apr. 2019
Presented and ran a demo of research breakthroughs, for members and attendees at LESA's 2019 Industry-Academia Days Conference.

Other Links

Live Availability, *https://doodle.com/mm/zacharynawrocki/availability*
This calendar shows in real time my current availability to talk over the phone, meet, and/or schedule an interview. It syncs with a calendar, which aggregates my work schedule, personal commitments, and project commitments, to list when I am free.

Additional Places to Contact Me, *https://zacknawrocki.github.io/blog/Contact/*
In addition to my personal email and LinkedIn above, this webpage lists my personal, professional, and project contact info, including email addresses and links to directly message me.

Google Scholar, *https://scholar.google.com/citations?hl=en&user=QrTLJJ8AAAAJ*
I greatly enjoy reading the latest computer science and mathematics papers on Google Scholar every morning. This is my Google Scholar profile, which lists my research interests, my academic contributions, and the brilliant research colleagues (as well as great friends) I have had the privilege of working with during my undergraduate studies at Rensselaer.

Relevant Coursework

Randomized Algorithms for Machine Learning and Optimization, Machine Learning from Data, Programming Languages, Operating Systems, Introduction to Artificial Intelligence, Open Source Software, Software Design and Documentation, Network Programming, Principles of Software, Introduction to Algorithms, Computer Organization, Foundations of Computer Science, Data Structures, Computer Science I, Differential Equations, Multivariable Calculus and Matrix Algebra, Calculus II, and Calculus I