Zachary S. Nahman

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Education

Colorado School of Mines, Golden, CO
Master of Science [M.S.] in Computer Science
Attended 01/2018 - 12/2019 (expected)

Regis University, Denver, CO
Non-Degree Seeking in Computer Science
Attended 09/2016 - 08/2017
GPA: 3.8/4.0

Colorado School of Mines, Golden, CO
Bachelor of Science [B.S.] in Mechanical Engineering
Attended 09/2011 - 05/2015
GPA: 3.0/4.0

Projects

Newmont Innovation Challenge 2018 - Golden, CO

- Team tasked with building innovative technology for mining industry
- Creating software that performs mapping in enclosed environments with two RGB-D sensors
- Software has applications in mine mapping, underground search and rescue, and inside buildings
- Companies exist that provide a similar device, but their use of LiDAR is cost prohibitive - we use only two RGB-D sensors (such as MS kinect, ASUS RGB-D, or Intel RealSense)
- Pitch competition is held in May, 2018
- This project may feed into DARPA Subterranean Challenge

UGV and UAV Teaming - Golden, CO

- Serving as Project Manager for the UGV (unmanned ground vehicle) and UAV (unmanned aerial vehicle) teaming project for the Human-Centered Robotics lab at Mines
- Goal is to create robotic systems capable of teaming in underground environments (both flying and ground)
- Using ROS (Robot Operating System) for all development
- Preliminary data shows its feasible for the UAV to follow the UGV at a threshold distance above the UGV
- Also works towards DARPA Subterranean Challenge

Hack CU Episode 4 - Labor Log - Boulder, CO

- Attended my first hackathon at University of Colorado in Boulder

- Met a team and we worked on using blockchain technology to end modern-day slavery
- Wanted to create a blockchain database where home country governments can monitor the well-being of those that travel abroad and ensure they are being properly paid
- Used neo-blockchain and arduino RFID fob
- Next steps are to integrate RFID readings with blockchain and create a front-end with neon-js (didn't have time as the hackathon was only 24 hours)

Computer Aided Robotics for Welding (CAR-W) - Lockport, LA

- Executed an 11 month relocation (Lockport, LA) site support contract for Wolf Robotics
- Conducted on-site operation for 9-axis Robotic Welding Gantry in marine application (shipyard)
- Performed experiments with latest automated path planning software and relayed results to the Software team at Wolf
- Taught training courses to operators, production planners (middle-management), and engineers on using industrial robots and CAR-W software

NASA 2015 Robotic Mining Competition - Kennedy Space Center, FL

- Team designed, built, and tested a robotic rover for excavation of planetary surface simulant
- Served as Lead Engineer for excavation subsystem and NASA Liaison
- Designed and built a bucket ladder for planetary surface excavation
- Team won 2nd place for presentation and demonstration

Presentations

2016 ShipConstructor User's Conference - Mobile, AL

- Presented on behalf of Wolf Robotics at the 2016 ShipConstructor user's conference in Mobile, AL
- Described functionality of latest software developments

Awards and Honors

07/2015	Engineering Intern License earned in the State of Colorado
04/2013	SolidWorks Associate Certification
09/2012	Varsity Swimming Scholarship earned to Colorado School of Mines
09/2011	President's Academic Merit Scholarship to Colorado School of Mines
05/2011	Gordon Cramer Award Scholarship for Exceptional Student Athletes Awarded by Longmont High School
04/2009	Earned the rank of Eagle Scout in the Boy Scouts of America

Employment

Wolf Robotics, a Lincoln Electric Company - Fort Collins, CO

Software Engineer Intern (01/2018 - 2/21/2018)

- Project-based software implementation for robotic welding systems
- Generating reports on project milestones for defense industry

Project Engineer (06/2015 - 12/2017)

- Performed on-site support for 9-axis robotic welding gantry in marine application
- Generated technical reports for the government on project milestones
- Tested and reported feedback on new software releases
- Programmed robotic motion to weld customer parts
- Trained new Project Engineers on robotic manipulator programming
- Made technical contributions to company sales pursuits
- Responsible for weld quality and development of electrical welding parameters

Applications Engineer Intern (07/2014 - 08/2014)

- Generated welding cell concepts for prospective customers
- Performed cycle-time analysis on welded assemblies
- Designed fixture tool concepts in SolidWorks and performed robot reach analysis

Assembly Technician Intern (05/2014 - 06/2014)

- Assembled and tested robotic systems on the shop floor
- Utilized hand tools and machine tools
- Wired I/O cabinet circuitry according to engineering specification

Colorado School of Mines - Golden, CO
Student Ambassador (02/2013 - 05/2015

- Provided hospitality to prospective students and their families visiting CSM
- Gave large group and small group campus tours
- Supported large prospective student campus visits such as Discover Mines Day

Pomeroy IT Solutions *Mid-Range Operator (05/2012 - 08/2012*

- Loaded, unloaded, transported, and documented media for IBM's Boulder, CO data center
- Worked night shift on weekends

Volunteer

Power Mountain Engineering
Engineering Mentor (09/2015 - Present)

- Mentor talented high school students interested in STEM careers
- Performed nozzle optimization calculations in MATLAB (2016)
- Helped students design and build a supersonic ping pong ball launcher (2016)
- Assist students in construction of hovercraft from a kit (2018)

Colorado School of Mines - High Grade Publication
Poetry Editor

- Served as poetry editor for the Colorado School of Mines *High Grade* student arts showcase publication
- Recommended submitted poetry for publication

Expand Beyond Incorporated - Boulder, CO
Volunteer (Summer 2008, 2009, 2010, 2011, 2012)

- Helped with adaptive water skiing program for individuals with physical disabilities
- Performed jet ski rescue and trained learners to water ski
- Managed equipment

Skills

Software Packages:
Robot Studio, Visual Studio, Netbeans IDE, ShipConstructor, AutoCAD, LabVIEW, Microsoft Office Suite (Excel, PowerPoint, Access, Project, Word, OneNote), MATLAB, SolidWorks, MathCad, Minitab, Mathematica, Version Control (git and SVN)

Programming:
Familiar with...

- Java
- C#
- Python
- C++
- MATLAB
- Laravel PHP Framework
- HTML
- Jekyll (static website generator)
- LaTeX

Industrial Manufacturing:
Familiar with CNC programming and operation with MasterCam, operation of hand mill and hand lathe, and use of hand tools. Extensive understanding of welding processes.

Teamwork and Goal Setting:
Excellent goal setting, teamwork, and time management skills. I am driven to solve problems and perform well in teams.

Communication:
Developed excellent communication skills in both technical and non-technical situations. Served as project Liaison and provided reports to government agencies.