

Saurav Laxmikant

UNIVERSITY OF WATERLOO · FALL COOP 2021

☎ (+91) 82619-11136 | ✉ slgurhal@uwaterloo.ca | 📱 SauravL3010 | 🌐 SauravLaxmikant

Summary

- Programming** Proven experience in developing bussiness-critical web applications. Implemented REST API with third-paty intgrations and databases
Assisted the teaching faculty at Waterloo in computer classes. Developed interactive games and websites as personal projects
- Languages:** Python, JavaScript, C++, Matlab, HTML, CSS, \LaTeX . **Tech:** React.js, Node.js, Express.js, Git, SQL, MongoDB, GraphQL
- Adaptibility** Showcased rapid learning ability by learning various developer tools while digitizing signode's operations and integrating its ERP system

Work Experience

Signode Canada

Markham, Canada

CONTINUOUS IMPROVEMENT ENGINEER - SOFTWARE DEVELOPMENT

Jan. 2021 - May. 2021

- Lead the transition of signode's operation (e-commerce, shipping) to a digitized and paperless platform. Achieving 25% decrease in operational cost
- Developed complex python algorithms to parse data from pdf's through precise coordinate and pattern recognition. Optimizing parsing speed to <1s for 50+ page objects, while uploading this data to MongoDB and microsoft's OneDrive to create RESTful API
- Leveraged the ability of the algorithm to profit signode \$300k worth of inventory backlogs by parsing 8000+ ODR'ed pages and images from past year
- Queried database API using GraphQL and rendered pdf's with OneDrive's API, to develop a full-stack application using NodeJS as a backend
- Developed React components to build responsive webpages including component lifecycles to tune system performance and decrease response time

University Of Waterloo - Engineering

Waterloo, Canada

ONLINE TEACHING ASSISTANT - COMPUTER PROGRAMMING

May. 2020 - Sept. 2020

- Held computer classes and coding practice sessions in C++ and Matlab for first-year engineering students. Verified and marked code submissions
- Developed 100+ unit tests in C++ and python's pexpect library to automate verification of student code submissions on marmoset server
- Prototyped and deployed websites to enhance student's learning experience. Used ReatJs and NodeJs to convert mock-ups to useable web presence
- Analyzed attendance and activeness data of 200+ students across the faculty. Actively provided detailed reports and trends to professors

Tesla Motors Canada ULC

Toronto, Canada

MANUFACTURING PLANNING ASSISTANT

Sept. 2019 - Dec. 2019

- Utilized strong Python skills to create MRP Forecast and to filter out manufacturing plan history that reduced part repeatability by 40%
- Collaborated with cross-functional teams (design, quality, sales and production) and manufactured 700+ unique parts for Tesla's lithium-ion battery production line and liquid dispensing pneumatic pumps, focusing on manufacturability, product quality and cost reductions
- Developed and implemented a new planning strategy that reduced manufacturing planning time by 20% and paper usage by 8500 sheets/yr

Entrepreneurship Society

Waterloo, Canada

FRONT-END WEB DEVELOPER

May. 2019 - Sept. 2019

- Developed user-oriented visuals and UI features using ReactJs and RESTful routing. Integrated new interfaces with back-end systems like NodeJs
- Coordinating user research and user testing efforts, created assets such as icons and visuals for projects using Adobe Photoshop and Figma
- Worked closely with Social media and marketing team. Prototyped and published new Sponsorship packages with new visual features

Tircon Corp, Canada

Hamilton, Canada

DIMENSION CONTROL QUALITY ENGINEER

Jan. 2019 - May. 2019

- Performed dimensional validation using CMM and PC DMIS, conducted gauge R&R study and prepared control and containment plans
- Performed tolerance analysis to ensure success in high-volume production and manufacturing of the new Dodge-RAM step-pad

Projects

Yelp-Camp Web Application

Fall 2020

Tech Stack: JAVASCRIPT, HTML, BOOTSTRAP, NODEJS, EXPRESSJS, MONGODB, [Link to GitHub](#)

- Designed a website to review and locate campgrounds using html and JS. Implemented RESTful routing connecting to login and editing features
- Developed a back-end parser (NodeJs, ExpressJs) to interpret and manipulate data stored in MongoDB and to consume API from Google maps

Path-Finding Visualizer and Game Development

Summer 2020

Tech Stack: PYTHON, PYGAME, [Link to GitHub](#)

- Built python application for visualizing path-finding and maze-generation A* algorithm. Wrote a 10 pg research on optimization of path-finding
- Developed two complete games using C++ within 48 hrs, over 500+ lines of code. User interactive JavaScript and several other Python games

Education

University Of Waterloo

Ontario · Canada

B.S. IN MECHANICAL ENGINEERING

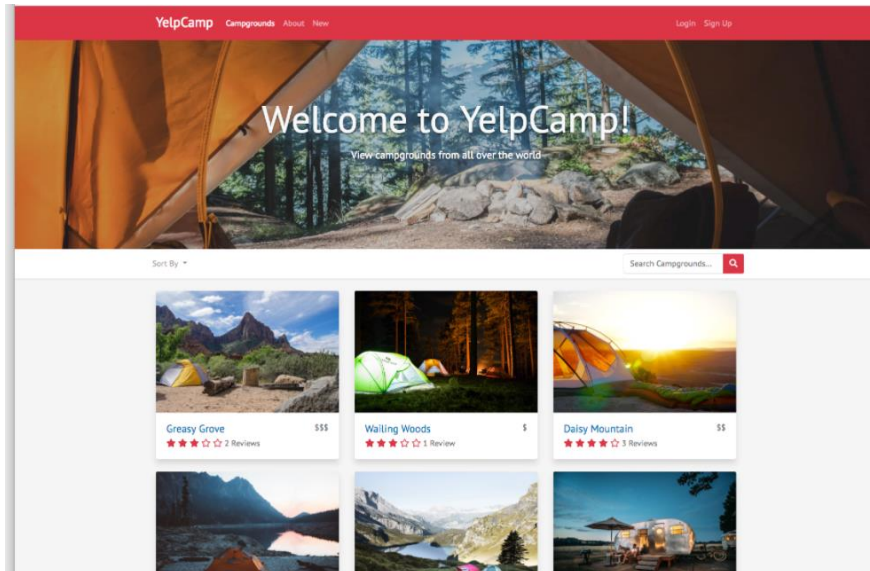
Sept. 2018 - Present

- Achieved Excellent academic standing through courses in Programming, Circuits and Instruments, Mechanics and Material design

2020

Yelp-Camp WebApplication – HTML, NodeJs, ExpressJs, MongoDB

- Crowd-sourced local campground review website, where users can see postings about different campgrounds, what they're rated, comments and location using Google Maps API.
- Used Express.js and Node.js to create a client-facing website. MongoDB is used to create and connect different databases to store and retrieve information.
- The front-end design includes HTML, CSS, and JavaScript. The website includes back-end features such as comments, login and password, and user postings.



Log In here

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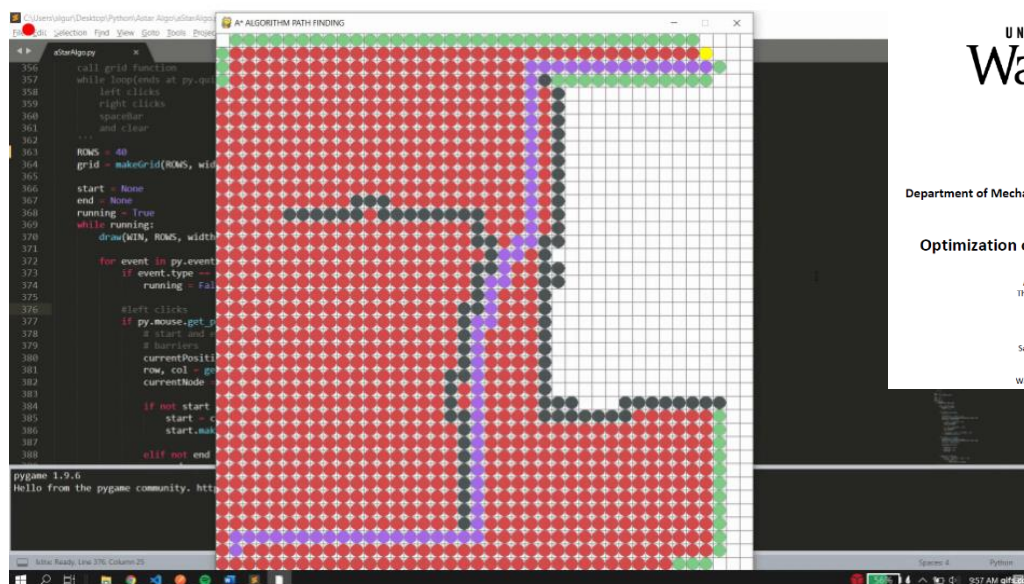
By **you**

This is amazing.

2020

Optimizing the Pathfinding Algorithm – Python, Pygame module, Visual Studio, OOP

- 400+ lines of code to visualize pathfinding process. User draws complex wall barriers, initial and final points. Nodes are traversed using optimized algorithm creating the purple path.
- I also wrote a 10-page research on optimization of path finding as my work term report.



Department of Mechanical and Mechatronics Engineering

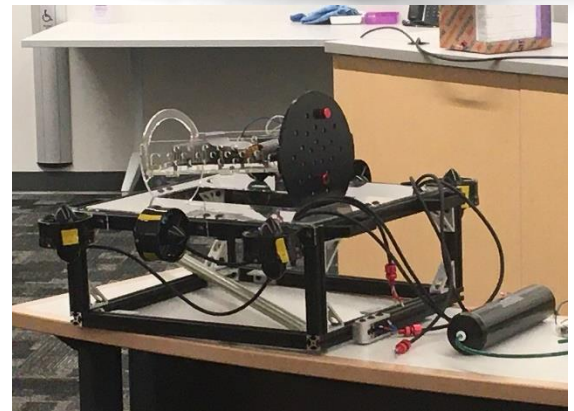
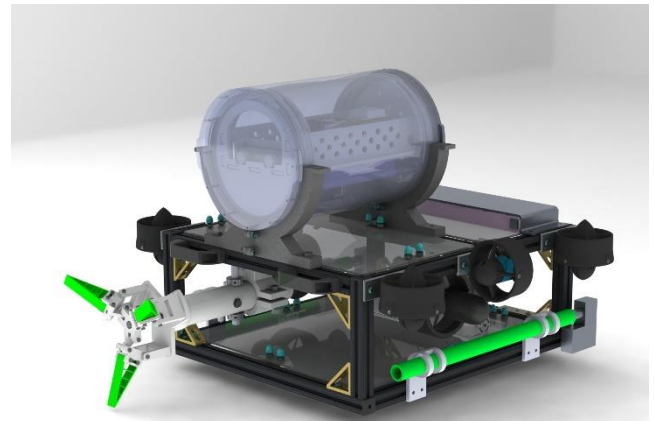
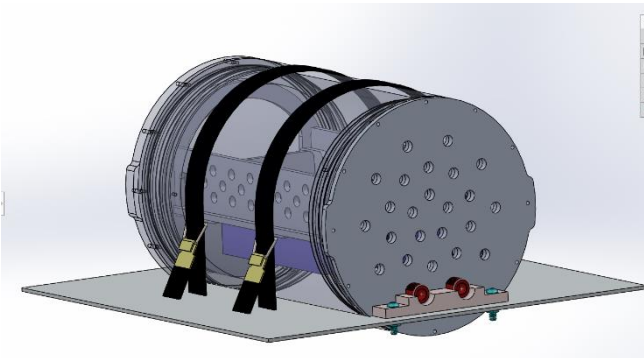
Optimization of Pathfinding Algorithms

A Report Prepared For:
The University of Waterloo

Prepared By:
Saurav Laxmikant Gurhale
181 Lester Street
150 University Ave W.
Waterloo, Ontario, N2L 0C2

2019 –
2020**Mechanical Designer – AquaDrone AUV**
(Frame & Electronics)

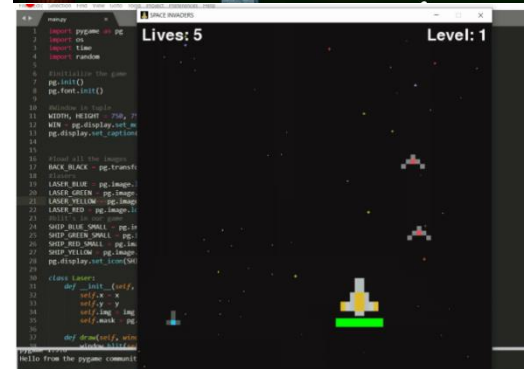
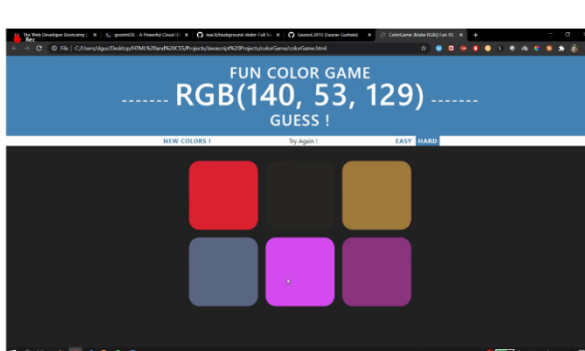
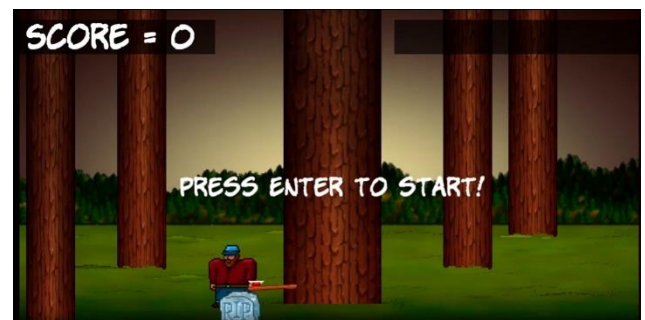
- Led a team of 10 and managed a budget of \$2500
- Successfully Constructed the frame and enclosure using SolidWorks (assembly – 300+ parts) and PCB electronics using raspberry-PI
- We are getting ready for the 2020 RoboSUB competition at San Diego



2020

Game Development – JavaScript, Python, C++, SFML 2D, Object Oriented Programming, Visual Studio

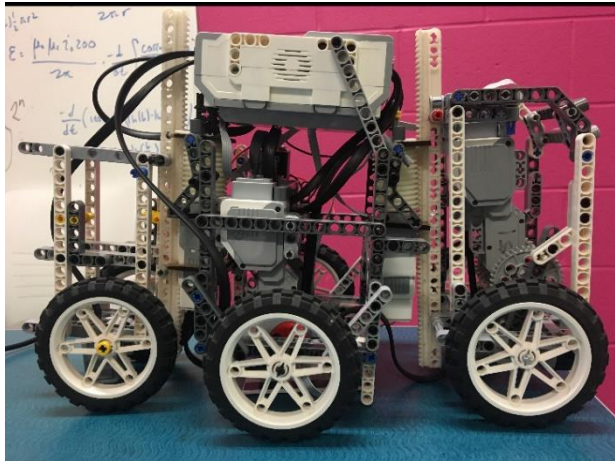
- Developed two complete games using C++ within 48 hrs. – Timber and Zombie Arena
- Created JavaScript games using, jQuery and DOM. And several other Python games.



2019

Robot Lego EV3 Climbing Wheelchair - Lego EV3 mindstorm (ROBOT-C and C++)

- Developed and prototyped an autonomous stair climbing wheelchair using gyro, ultrasonic and touch sensors, with the ability to climb 0.5m long staircase in 6.5 sec
- I modeled this in SolidWorks and built custom made 3D printed parts for Lego structure



2019

Creative Web Development – ReactJs, RESTful routing, NodeJS, Company Portfolio, Logos using Figma

- While working for Entrepreneurship Society I created innovative designs for their Sponsorship Packages, logos and website utilizing UI & UX principles.
- Developed user-oriented visuals and UI using ReactJs. Integrated new interfaces with Nodejs.

