

# ALI NOURI

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github.com/dynamic11

## EDUCATION

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### Masters of Science in Electrical Engineering

Sept. 2018 - present

Carleton University, Ottawa, Ontario

*Dr. Walter and Mary Chudobiak Entrepreneurial Scholarship*

*Ontario Graduate Scholarship for excellence in graduate studies*

### Bachelor of Engineering in Electrical Engineering, Co-op

Sept. 2013 - Apr. 2018

Carleton University, Ottawa, Ontario

Graduated with High Distinction

## TECHNICAL STRENGTHS

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### Computer Languages

Python, MATLAB, C/C++, Java, CUDA, PHP, JavaScript,

### Software & Tools

Git, GitHub, LaTeX, HTML, React, Laravel, Adonis, Google Collab

## WORK EXPERIENCE

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### Organizer and Developer

Jun. 2018 - Present

*CDH Studio (cdhstudio.ca)/ISED Canada*

- Proposed a program similar to Microsoft Garage to attract young developers
- Participated in interviewing and hiring students from universities across the region
- Providing mentoring and technical support to students
- The program has garnered interest from Health Canada and the Treasury Board of Canada

### Freelance Tool Developer

Jun. 2015 - Present

*Voozella.com*

- Use PHP, JS, HTML, and CSS to develop websites and tools for small businesses
- Provide consultation and assistance to clients to plan and publish Google advertisement campaigns
- Connect data visualizations tools such as Google Analytics and Data Studio for clients
- Developed a referral web app for Allstate insurance and Protective Plumbing Canada
- Maintain and support tools and websites (please see Relevant Projects)

### Research Assistant

Jun. 2017 - Aug. 2017

*Carleton University*

- Supported a team of researchers in preparation for a conference paper
- Set up and documented multi-core Linux servers for testing

### Simulation Software Developer (Intern)

Sept. 2015 - Sept. 2016

*Ericsson*

- Simulation software developer for LTE sandbox testing
- Used Java (OOP) to develop and maintain LTE simulation tools
- Used C to test and compare product performance with simulator

**Research Assistant (Intern)**  
*Carleton University*

Jun. 2014 - Aug. 2014

- Developed a circuit simulation program using MATLAB and tested with HSPICE
- Used C++ to extract and format the results obtained using HSPICE for data transfer into MATLAB
- Imported results into MATLAB from the HSPICE simulations using C++ and HSPICE Toolbox

## EXPERIMENTAL PROJECTS

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**Application of MLP in Targeted Marketing Campaigns**  
*Academic/Hobby Project*

Dec. 2019

- Given information such as the customer's age, occupation, and income we were asked to predict whether the marketing phone campaign would be successful
- Experimented with generating dummy variables instead of numerically encoding the data
- Used SMOTE to generate synthetic data points for positive outcome samples
- Used Python's scikit-learn library to implement a 3 MLP with Sigmoid activation functions and Adam Optimization to train the model
- Repo for this project can be found on my Github

### Important Challenges:

- Formatting and encoding all the different input data types to be usable with our model
- Understanding the dangers and benefits of using SMOTE to add data points

**Netflix ML Algorithm**  
*Academic/Hobby Project*

Dec. 2019

- Predict whether a user would enjoy "Miss Congeniality" based on their ratings of 30 other movies
- Used Python's scikit-learn library to implement a 3 MLP with ReLU activation functions for the hidden layer and Adam Optimization to train the model
- Used Python's Pandas library to format and prepare the data before feeding it into our model
- Used Python's Seaborn library to visualize the data and training error
- Repo for this project can be found on my Github

### Important Challenges:

- Picking the number of neurons in the hidden layer and activation functions to maximise accuracy

**IKEA Sales Finder**  
*Hobby Project*

Oct. 2019

- Developed a web scraper to notify me when Ikea was having a "Bedroom Sale"
- Used Selenium WebDriver and the Gecko browser engine to render the web page to parse the content
- Repo for this project can be found on my Github

### Important Challenges:

- IKEA's website uses client-side rendering that requires the tool to fully render the page before parsing

**CUDA Parallel Computing**  
*4th Year Project*

Sept. 2017 - April 2018

- Experimented with GPU parallelization for CAD algorithms
- Used **C++** and **CUDA** to run parallel data-driven modeling using Vector Fitting on the GPU

#### Important Challenges:

- Optimizing code and algorithms to achieve performance improvements using GPU computing
- Minimizing data transfer on the system bus between GPU and CPU to reduce speed bottlenecks

## WEB APPLICATION PROJECTS

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### Talent Management Tool

Feb. 2020 - Present

*CDH Studio*

- Managing 2 teams of 3 student to develop an **open-source** tool to track and connect employees based on skills and interests
- Similar to LinkedIn, users develop a virtual CV by adding work history and skills
- Create a robust HR tools to view and generate custom reports on the registered talent pool
- Using a Node.js, React, Redux, Ant Design, and other dev tools to make the application modern and easily customizable for use in all government departments

#### Important Challenges:

- Maintaining a balance between the clients needs, technological limitations, and deadlines
- Learning new technologies rapidly to be able to make meaningful contributions

### Jarvis Meeting Room Tool

Jan. 2019 - Present

*CDH Studio*

- Managing a team of 3 student to develop an **open-source** meeting room booking system
- Maintaining customer communication to ensure the tool meets the needs of ISED Canada
- Using a **MVC JavaScript** framework, **Adonis**, to speed up the development process

#### Important Challenges:

- Prioritizing code quality, maintainability, and documentation for future open source development
- Mentoring students at different skill levels and ensuring projects stays on track

### Music Transfer Tool

August. 2018

*Hobby Project*

- Developed a tool to automatically migrate a user's music library from Apple Music to Spotify
- Used **PHP** and **Laravel** to develop the tool with secure authentication

#### Important Challenges:

- Developing a queuing system to run the playlist migrations on the server to bypass API rate limiting.

### Referral Tracking Tool

Oct. 2017 - December 2017

*Allstate & PPC*

- Developed a tool for Allstate to track referral claims made for Protective Plumbing Canada
- Created functionality to view and track referrals by branch or by agent

#### Important Challenges:

- Implementing multiple user types with customized dashboards and varying levels of privileges

### **Coursepack Pre-order System**

July 2015

*IEEE Carleton Webmaster*

- Developed a coursepack pre-order system to record student orders, collect funds, and automatically notify students through email when their order had arrived.
- Used **Laravel** as a **PHP** framework to speed up application development

#### **Important Challenges:**

- Using Laravel's built-in email drivers and connecting to **Sparkpost** to deliver email notifications
- Ensuring the system was reliable as the app was collecting student information and orders

### **Voozella Event Discovery Tool**

June. 2015 - Jan. 2017

*Hobby project*

- Developed a local event discovery tool. The tool took in the user's mood and recommend events
- Used **PHP** and **Laravel** to begin the project with a strong framework and reliable foundation

#### **Important Challenges:**

- Determining the scope of such a large project and learning tools rapidly
- Creating user authentication, timezone and address formatting, and data validation/sanitization.
- Linking moods with corresponding events based on event metadata

## **VOLUNTEER EXPERIENCE**

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### **HPCPS Workshop Organizer**

Sept. 2017

- Developed and maintained the event website
- Helped organize and run the event

### **IEEE Carleton Webmaster**

Sept. 2016 - Present

- Developed and maintaining the IEEE Carleton branch website
- Developed and maintained the Coursepack Pre-order System

### **IEEE Ottawa CASS-SSCS-EDS Webmaster**

Sept. 2015 - Present

- Developed and maintaining chapter website

### **IEEE Carleton SPAC Webmaster**

Jun. 2014 - Aug. 2014

- Developed and maintained event website