

# EMMETT COLLINGS

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## EDUCATION

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### University of Calgary

September 2019 – December 2022

*Bachelor of Science, Major in Computer Science*

*Calgary, AB*

- GPA: 3.8/4.0
- Theoretical computer science focus
- Elective Highlights: Computer Security, Distributed and Randomized Algorithms, Compiler Construction, Database Design, Network Analysis, Retrogames

## EXPERIENCE

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### C++ Software Developer

May 2022 – August 2022

*Nobal Technologies*

*Calgary, AB*

- Worked with hardware and software to create and maintain smart mirror devices and their applications
- Large role in creation of smart mirror hospitality application
  - \* Contributed to system design for major rewrite of existing codebase for previous applications
  - \* Hospitality app provides functionality such as check in/out, ride share calling, room service, ticket booking
  - \* Integrated with several third party software platforms to provide the above functionality
- Technologies used: C++, Qt, QML

### Software Developer Intern

May 2021 – August 2021

*Neo Financial*

*Calgary, AB*

- Worked with developer experience (DX) to create internal tools to aid developer efficiency
- Created private code coverage tool (github action + web app) that tracked test code coverage of repositories
- Created developer contribution tracking web app, which kept leaderboards of code reviews, PRs merged, etc.
- Technologies used: Typescript, Node.js, MongoDB, Next.js

### Private Tutor

September 2017 – June 2018

*Self Employed*

*Calgary, AB*

- Specialized in high school physics and mathematics

## TECHNICAL SKILLS

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**Languages:** C++, Python, Assembly, Typescript/Javascript, C, Java

**Libraries/Frameworks:** Qt, Node.js, Jupyter

**Developer Tools:** git, bash, Linux, Windows

**Databases:** MongoDB, MySQL

## RESEARCH & PROJECTS

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### NHL Linemates Network | Python, Jupyter

September 2022 – December 2022

- A network analysis of the effects that hockey players have on their linemates
- The links between players are investigated using network science techniques such as community detection and degree centrality to determine players that effectively improve their teammates
- Makes use of data and network science as well as statistics for analysis
- Results summarized in an academic paper which can be found on my GitHub

### Bubbie-VI | 6502 Assembly

September 2022 – December 2022

- A game written in 6502 assembly for the Commodore VIC-20
- Players must retrieve lost pet ducks in a dungeon while dodging enemies
- Resource constrained (3.5K of memory available on the VIC-20)
  - \* Created ad hoc data compression schemes
  - \* Required efficient and small code
  - \* Uses self modification on code and data to increase space efficiency further

### Web Proxy | C, socket programming

January 2022

- Intercepts web traffic and replaced all jpgs from incoming HTTP responses to pictures of clowns
- Swapped plaintext to various joke phrases as well

## AWARDS & INTERESTS

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### **Awards**

- Deans List (2018, W2020, W2021)
- National AP Scholar (2015)
- National Swimming Championship Qualifier (2013-16)
- High School Div 3 City Champion – Volleyball (2014)

### **Interests**

- Reading – Classical literature, non-fiction
- Sports – rock climbing, volleyball, badminton, swimming
- Outdoor – rock climbing, backpacking, scrambling