

# Daniel Melcer

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## Education

### **Northeastern University**

Boston, MA

Khoury College of Computer Sciences • GPA: 4.0

September 2017 - Present

Candidate for a Bachelors of Science in Computer Science, Minors in Math and Physics

May 2021

**Coursework** Algorithms (graduate), Computer Systems (graduate), Object Oriented Design, Linear Algebra  
Building Extensible Systems, Logic and Computation, Group Theory, Number Theory

**Awards** Honors Program, Dean's List

**Activities** NUHacks, Times New Roman Satire Magazine

## Skills

**Languages** Python, Java, C#/VB.NET, Typescript, Javascript, SQL, Racket, Solidity, C/C++

**Frameworks** PyTorch, REStEasy, React, Sequelize, CUDA

**Tools** Git, Oracle, Postgres, AWS

## Experience

### **Khoury College of Computer Sciences • Northeastern University**

Boston, MA

Fundamentals of Computer Science 1 Course Assistant

January 2018 - Present

- Provided guidance to students during lab sections on topics such as functional programming and effective testing
- Held scheduled office hours to assist students with program design concepts taught during lecture
- Evaluated student work and wrote detailed feedback about program architecture and implementation

### **Griffiss Institute • Air Force Research Laboratory**

Rome, NY

Research Co-op

January 2019 - June 2019

- Researched a novel reinforcement learning exploration method by combining tree search and intrinsic curiosity
- Implemented a mechanism to learn an optimal policy faster when partial environment dynamics are known

### **Forward Thinking Systems**

Jericho, NY

Software Development Intern

May 2018 - August 2018

- Detected features such as camera blockages present in image thumbnails with Python and Keras
- Devised a Typescript Alexa application to answer common customer queries about their fleet
- Collaborated with Poland office on C# application to view and export archived video from an external disk
- Migrated a password-based Java SOAP application to REST and implemented an OAuth2 token flow
- Created a real-time dashboard in VB.NET to report statistics on current support queues and SLA percentages

### **Brookhaven National Laboratory**

Upton, NY

Summer Research Intern

July 2016 - August 2017

- Constructed a Django website to improve operational efficiency while administering on-site network switches
- Wrote a Python desktop application to manage, sort, and search a database of over 1,000 ethernet ports
- Increased speed of search for mathematical constants by over 100x with CUDA

## Projects

### **Invertible Programming Language • Northeastern University**

Boston, MA

Language Extension • [github.com/Inverse-Lang/Inverse-Lang](https://github.com/Inverse-Lang/Inverse-Lang)

January 2018 - April 2018

- Extended Racket programming language and standard library to allow for definition of invertible functions
- Utilized algebraic rules to automatically generate inverses of functions composed of other invertible functions

### **Smart Contract Applications • Personal Project**

December 2018 - January 2018

Connect Four via Smart Contract • [connect.danielmelcer.net](https://connect.danielmelcer.net)

- Learned how to develop applications to run on globally distributed Blockchain platforms such as Ethereum
- Programmed a Solidity smart contract allowing people to initiate, join, and play Connect Four games
- Built a corresponding website to interface with the contract if a Web3 browser or extension is installed