

# Adam I. Richardson

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## EDUCATION

### University of Denver, Denver, CO

September 2020 – June 2024

*BS Computer Science, Minors in GIS and Mathematics*

*Magna Cum Laude (3.87 GPA)*

- CS coursework: Software Engineering, Data structures & Algorithms, Systems Programming, Computer Organization, Operating Systems, Programming Languages, Natural Language Processing, Mathematical Cryptography, Game Programming, Linear Algebra, Quantum Computing, Human-Centered AI
- GIS coursework: GIS Programming, Computer Cartography, Geographic Statistics, Remote Sensing, Environmental GIS, Geographic Information Analysis

### Arapahoe Community College, Castle Rock, CO

August 2019 – May 2020

*Associates Certificate for Cisco Networking*

- Relevant coursework: CompTIA A+ intro, Cybersecurity, CISCO Networking I, II, and III

## RELEVANT PROJECTS

### RSA Cryptosystem (Java) – DU

May 2023 – June 2023

*Solo Project*

- Created a full cryptosystem from the ground up that allows key generation and encryption/decryption.
- Searches for prime numbers by putting 2048-bit numbers through many Solovay-Strassen tests
- Generates the private and public keys and outputs to a file
- Also allows for the entry of keys for encryption/decryption of text
- Uses complex algorithms for giant exponents, Jacobi symbols, and multiplicative inverses
- Tested the project by sending messages to others with our own systems using public/private key pairs

### Quirk2Qiskit (Python/JavaScript) – Personal Project

March 2024 – Ongoing

- Solo Project - <https://github.com/AIrvnRichardson/Quirk2Qiskit>
- Turns quantum circuits made in Quirk into python code for Qiskit
- Now uses regex on the quirk URL to interpret and recreate the circuit as code
- Outputs a text file containing python code for your Quirk circuit to run on a quantum computer
- Translated to JavaScript so it can be run as a web application

### Tool for Molecular Diagnostics Lab – DU

January 2024 – March 2024

*One of six members, tasks were spread evenly*

- Upgraded an old code base for a python command line tool to have a graphical interface with Tkinter
- Upgraded a pipeline for converting EDS files and processing them for importing into a SQL database
- Designed a system for checking MD5 hashes to detect duplicate files before converting for performance
- Used an agile development process with two sprints
- Self-guided skills development for Tkinter and SQL before starting development
- Met with the client regularly for requirements elicitation

## SKILLS

**Programming:** Java, Python, C/C++/C#, Haskell, SQL

**Web Development :** Javascript, HTML, CSS, API's

**Game Development:** Unreal, Unity3d, Godot, GMS2

**Virtualization software:** Docker, VirtualBox

**Geography Software:** ArcGIS, Excel (for statistics), JMP, ENVI