

# Jonathan de Koning

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## EXPERIENCE

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### Software Engineer

Feb. 2021 – Present

*Blackgate Cyber LLC*

*Remote*

- Created data analysis platform in Python to automatically download internet-health data from 150+ countries, analyze the data, and track changes over time to provide policy-makers with relevant statistics.
  - Has handled 100+ GB of data and tracked 32 different metrics for over a year and a half.
  - Includes a Trie data structure for efficient IP lookups.
  - Incorporates rigorous data validation and formatting to reduce file size and computation time.

### Undergraduate Research Assistant

August 2023 – Present

*UTSA IOT Forensics and Security Lab*

*San Antonio, TX*

- Developed a Python program to recurse through unpacked firmware files while storing file names, SHA-256 hashes, and other metadata in a PostgreSQL database.
- Validated and wrote technical documentation for multiple lab projects to ensure future researchers could access quality instructions and reports.

### Undergraduate Research Assistant

September 2024 – Present

*UTSA Reinforcement Learning Research Team*

*San Antonio, TX*

- Worked on a team of 6 researchers to learn about and develop RL models in Python / TorchRL.
- Gave presentations on RL findings, RL algorithms, and dynamic programming.

## EDUCATION

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### The University of Texas at San Antonio

Expected Graduation - May 2026

*Bachelor of Science, Computer Science*

*San Antonio, TX*

- Director of the UTSA Competitive Programming Club.
- Rank 1 on the UTSA Kattis leaderboard.
- ACM UTSA Officer.
- Research Assistant in two labs.
- GPA: 3.73/4.0.
- Mathematics Minor.

## SKILLS & INTERESTS

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- Skills:** Python (Advanced); SQL (Intermediate); Git (Intermediate); Advanced Data Structures; Mathematics; Algorithmic Problem Solving; Automation
- Interests:** Competitive Programming; Graph Theory; Computational Geometry; Teaching; Running; Funk/Jazz

## LEADERSHIP & VOLUNTEERING

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- As the director of the UTSA competitive programming club, I teach data structures and algorithms to fellow students with the aid of custom slideshows, problem sets, and lectures.
- As an executive officer of ACM's UTSA student chapter, I am responsible for coordinating events, promoting computer science to other students, communicating with faculty to spread awareness of our opportunities and workshops, and ensuring the organization runs smoothly.