Ben M. Dunko

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Education

Blacksburg, VA **Virginia Tech** **May 2022**

- Bachelor of Science in Computer Science *GPA: 3.4*

Work Experience

Software Development Intern **The OpenNMS Group** **Summer 2020**

- Spearheaded design of anomaly detection system which used open-source anomaly detection models to analyze OpenNMS network metrics for irregular behavior
- Developed Kafka consumer in Java to poll for metric data, which was then organized into time series data and used to build EGADS anomaly detection models
- Contributed to regular stand-up meetings as part of an Agile team

Instructor **iD Tech Camps (UNC)** **Summer 2018/2019**

- Led camp classes and activities, taught introductory Python through game design to middle and high-school-aged campers using PyGame

Projects

Plateau (C#)

bdunko.github.io/plateau

- Independently created life simulation video game using MonoGame framework
- Implemented 2D physics and movement, dynamic audio, user interfaces, inventory and crafting systems, character customization, NPC pathfinding, a persistent world, and a branching dialogue system from scratch without using external libraries
- Many more details and gameplay footage are available at the website link above

Capstone – Implementing Efficient Multithreading in PintOS (C)

- Added multithreading support to the PintOS kernel allowing programs to create, manage, and join threads, enabling parallelization in user-level programs
- Implemented synchronization primitives including locks, semaphores, condition variables, and barriers enabling user programs to synchronize between threads
- Wrote and profiled the performance of several multithreaded test programs, showing a near 99% speedup per additional CPU core when compared to serial (single-threaded) performance in ideal conditions
- Coordinated team programming and design efforts to ensure deadlines were met

SheriffScorer (Java/Android)

- Built scoresheet application for the Sheriff of Nottingham physical board game, allowing users to calculate scores and determine game-winner more easily
- Achieved 10,000+ downloads on the Google Play store with a 4.5-star average rating

Skills

- Languages (Proficient): C, Java, C#
- Languages (Prior Experience): C++, Python, Ruby, HTML/CSS/JavaScript, GDScript
- Tools: Git, Linux, Windows, Android, Bash, GCC, Valgrind