

# Ben M. Dunko

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[bdunko.github.io](https://bdunko.github.io) | [github.com/bdunko](https://github.com/bdunko)

## Education

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**Blacksburg, VA**

**Virginia Tech**

**May 2022**

- *Bachelor of Science in Computer Science*

*GPA: 3.4*

## Experience

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**Software Development Intern**

**The OpenNMS Group**

**Summer 2020**

- Designed anomaly detection system in Java, which used open-source anomaly detection models to analyze OpenNMS network metrics for irregular behavior
- Developed Kafka consumer to poll for metric data, which was then organized into time series data and used to build EGADS anomaly detection models
- Participated in an Agile software development team using Jira and other Atlassian tools

**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

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**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, achieving a 98% speedup per additional CPU core when compared to serial (single-threaded) performance in ideal conditions
- Additionally implemented several other kernel components such as CFS (Completely Fair Scheduler), virtual memory, and a indexed file system

**Plateau | C#, MonoGame**

[bdunko.github.io/plateau](https://bdunko.github.io/plateau)

- Independently created life simulation video game project using MonoGame framework
- Implemented 2D physics and movement, dynamic audio, user interfaces, inventory and crafting systems, character customization, 2D pathfinding, a persistent world, and other features

**SheriffScorer | Java, Android**

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

## Skills

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- **Languages:** C, Java, C#, C++, Python, HTML/CSS, JavaScript, Ruby
- **Tools:** Git, Linux (CentOS), Windows, Android, Bash, GCC, GDB, Valgrind, Jira