

# William Boyles

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## Education

### North Carolina State University

B.S. IN COMPUTER SCIENCE AND MATHEMATICS

- Valedictorian, Summa Cum Laude, Phi Beta Kappa, Dean's List (8 semesters)
- University Honors Program, Computer Science Honors Program

*Raleigh, NC*

*2018 - 2022*

## Experience

### Microsoft

SOFTWARE ENGINEERING INTERN

- Created Azure resources to monitor critical infrastructure for failures, improving response times
- Built monitoring tools in Azure for purchase infrastructure, ensuring government compliance
- Deployed solutions to production and airgapped government clouds

*Redmond, WA*

*Summer 2021*

### IBM

CLOUD & COGNITIVE SOFTWARE INTERN

- Created Python tool to visualize cloud outages and identify root causes in real-time, driving response improvements
- Developed Python Slack bot to provide actionable, on-demand data to outage responders
- Overhauled data pipeline via a technical redesign, increasing speeds by up to 5900%

*Durham, NC*

*Summer 2020*

### Forsyth Country Day School

ENGINEERING CAMP COUNSELOR

*Lewisville, NC*

*Summers 2016 - 2019*

### Pool Professionals

LIFEGUARD

*Winston Salem, NC*

*Summers 2017 - 2019*

## Skills

**Languages:** Python | Java | C# | JavaScript |  $\text{\LaTeX}$  | HTML

**Technologies:** Docker | Bootstrap | React | Git

## Projects

### Lights Out

- Based on 1990's handheld electronic game, but has more features like dynamic board sizes
- Written in Java using Android Studio
- Released for free on Google Play Store for all Android devices

*Android Mobile App*

### NCAA Bracket Prediction

- Automatically scrapes the latest game data and outputs predictions as a  $\text{\LaTeX}$ -compiled PDF
- Python tool that implements PageRank, Elo, Bradley, and other custom ranking algorithms
- Algorithms consistently outperform average prediction tournament entries and my personal predictions

*Python Tool*

### wmboyles.com

- Personal domain containing resume, detailed project write-ups, and contact info
- Overhauled design to use Bootstrap, increasing mobile usability
- Built using Jekyll, minimizing code redundancy

*Personal Website*

### Math Summaries

- Summaries of college math courses, including multivariable calculus and differential equations
- Written in  $\text{\LaTeX}$  and published as PDFs, allowing open source contributions
- Committed to the public domain, allowing users to always access information for free

*Open Source Math Textbooks*

## Writing

### Most Clicks Problem in *Lights Out*

- Work based on extension of 1990's electronic game
- Introduced the Most Clicks Problem, and solves it for two specific instances

*Research Article*

### Resolution to Sutner's Conjecture

- Proves 30+ year old conjecture related to the Lights Out Game

*Research Article*