William **Boyles**

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Education

North Carolina State University   *Raleigh, NC*
B.S. in Computer Science and Mathematics   *2018 - 2022*
- Valedictorian, Summa Cum Laude, Phi Beta Kappa, Dean's List (8 semesters)
- University Honors Program, Computer Science Honors Program

Experience

Microsoft   *Redmond, WA*
Software Engineering Intern   *Summer 2021*
- 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

IBM   *Durham, NC*
Cloud & Cognitive Software Intern   *Summer 2020*
- 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%

Forsyth Country Day School   *Lewisville, NC*
Engineering Camp Counselor   *Summers 2016 - 2019*

Pool Professionals   *Winston Salem, NC*
Lifeguard   *Summers 2017 - 2019*

Skills

Languages: Python | Java | C# | JavaScript | LaTeX | HMTL

Technologies: Docker | Bootstrap | React | Git

Projects

Lights Out   *Android Mobile App*
- 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

NCAA Bracket Prediction   *Python Tool*
- Automatically scrapes the latest game data and outputs predictions as a 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

wmboyles.com   *Personal Website*
- 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

Math Summaries   *Open Source Math Textbooks*
- Summaries of college math courses, including multivariable calculus and differential equations
- Written in LaTeX and published as PDFs, allowing open source contributions
- Committed to the public domain, allowing users to always access information for free

Writing

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

Resolution to Sutner's Conjecture   *Research Article*
- Proves 30+ year old conjecture related to the Lights Out Game