

# William 'Nat' Hill

347-254-2296 | [nat.hill@rice.edu](mailto:nat.hill@rice.edu) | [nathill.me](https://nathill.me) | [linkedin.com/in/hillnat/](https://linkedin.com/in/hillnat/) | [github.com/nat-hill](https://github.com/nat-hill)

## EDUCATION

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### Rice University

*B.S. in Computer Science, Minor in Philosophy*

*Relevant Coursework:* Operating Systems, Algorithmic Robotics, Data Structures & Algorithms I & II, Grad Machine Learning, Computer Systems, Parallel Programming, Program Design, Abstract Algebra, Discrete Math, Honors Linear Algebra, Multivariable Calculus, Tech Product Management

August 2021 – Expected May 2025

1560 SAT; 1520 PSAT; GPA: 3.71/4.00

## EXPERIENCE

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### Software Engineer Intern

*Gusto*

May 2024 – Present

*New York City, NY*

- Worked on the Payments team, wrote code partially responsible for processing over **50 billion dollars a year**.
- Streamlined complicated internal payment investigation progress with automated actions for Ops teams in Ruby.
- Optimized certain slow database queries, to bring the number of internal tool errors to **zero**.

### RiceApps President

*Rice University*

August 2021 – Present

*Houston, TX*

- Spearheaded six software projects with several **multi-million dollar** nonprofit clients.
- Coordinated and taught 100+ students in developer program, **launching full-stack software for social good**.
- Singlehandedly partnered with Houston Ballet, Museum of Natural Science, and the Texas Heart Institute.

### Software Development Intern

*Amazon Web Services*

May 2023 – August 2023

*Austin, TX*

- Interned with the AWS Supply Chain team that provides machine-learning powered insights to customers.
- Engineered secure internal automated query CLI application with Lambda, S3, Typescript, and the AWS CDK
- Facilitated **63% lower customer error response time** based on operator data across multiple teams.

### REU Research Intern

*Rice Networks Group, Rice University*

May 2022 – September 2022

*Houston, TX*

- Investigated autonomous, tetherless, aerial drone networks under Professor Edward Knightly.
- Devised a script in MATLAB / Python to analyze and process wireless signal data, **improving runtime by 10x**.
- Analyzed 30GB+ datasets in order to improve signal strength and AOA (Angle of Arrival) prediction.

## PROJECTS

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### Nab 3D | *Typescript, Swift, React, Vite, Cloudflare, Axios, ThreeJS*

Feb 2024 – Feb 2024

- Led a student team to create a seamless video to 3D model platform.
- Created hosted backend API and photogrammetry model.
- Allowed users to implement 3D model on website in one line of code.
- Won **'Best Beginner Hack'** at Stanford's TreeHacks 2024, the largest and most prestigious hackathon in the US.

### Operating System Kernel & File System | *C*

January 2024 – May 2024

- Developed a high-performance operating system with corresponding file system from scratch in C.
- Capable of handling of initializing memory, executing programs, initializing terminals, alongside concurrent I/O.

### Photo Date Estimation w/ Deep Learning | *PyTorch, Python, Jupyter*

April 2023 – May 2023

- Designed deep learning models leveraging zero-shot pre-trained models and CNNs to predict image dates.
- Surpassed human-level performance, with validation accuracy within three years on average with computer vision.
- Received the **highest grade in the class of graduate students**.

## TECHNICAL SKILLS

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**Languages:** Python, JavaScript/Typescript, Java, C, Go, Ruby, Swift, SQL, HTML/CSS, C++, AutoDesk/CAD

**Frameworks:** React, Next.js, Bun/Node, Ruby on Rails, Flask, MERN, Express.js, jQuery, Svelte, SwiftUI

**Libraries/Developer Tools:** AWS CDK, Docker, Lambda, EC2, S3, MongoDB, Firebase, REST, GraphQL, Git

**Other Interests:** Cycling, Backpacking, Keyboards, Coffee, Graphic Design, Climbing, Film Photography