

# Eric Thomas Schneider

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## Education

**Virginia Tech** (tentative) May 2029 (expected)  
Computer Science (PhD)

**University of North Carolina at Chapel Hill** May 2024 (expected)  
Computer Science (MS)  
Select courses (in progress): Interactive Computer Graphics, Hardware Security and Side Channels (grad).  
*Select courses:* 2D Computer Graphics, Research Topics in Security (grad), Computer Vision (grad).

**University of North Carolina at Chapel Hill** May 2023  
Computer Science (BS), Mathematics (BS)  
GPA: 3.632/4  
*Select courses:* Web, Languages and Computation, Databases, Compilers, Programming Language Concepts, Algorithms and Analysis, Operating Systems, Operating System Implementation (grad), Digital Logic, Operating Systems (grad), Software Engineering Laboratory, Differential Equations, Linear Algebra, Mathematical Methods for the Sciences, Combinatorics, Probability, Real Analysis, Numerical Analysis, Advanced Linear Algebra.

## Research

**OSCAR** (UNC Computer Science Department) Jan 2023-present

- Research optimization of Gramine library OS using Intel SGX2 under Prof. Donald Porter.
- Contribute writing to the upcoming paper, *Adaptive and Efficient Dynamic Memory Management for Hardware Enclaves* (to be submitted).
- Write literature review on mechanisms of memory protection.
- Explore port of Keystone TEE to uClinux.
- Manage Gramine benchmarking.
- Serve on ASPLOS 2024 Artifact Evaluation Committee.

**ADAER** (UNC Computer Science Department) May 2023-Dec 2023

- Research asynchronous video representation under Andrew Freeman, Prof. Ketan Mayer-Patel, and Prof. Montek Singh, funded by the Laboratory for Analytical Sciences (LAS) in summer 2023.
- Implemented transcoder bandwidth limiting feature in Rust.
- Implemented logging feature to Rust implementation of DVS Fast algorithm.
- Port ADAER to Windows and improve CI using GitHub Actions.
- Write a survey paper.

## Teaching

**Teaching Assistant** (UNC Computer Science Department) Aug 2023-present

- Tutor students in Systems Fundamentals (COMP 211) under Prof. Brent Munsell and Operating Systems (COMP 530) under Prof. Donald Porter (fall 2023).
- Tutor students in Compilers (COMP 520) under Syed Ali (spring 2024).
- Manage quizzes, midterms, and the final (COMP 211).
- Manage and contribute towards labs and associated autograders, using Bash, Python, and C.
- Grade classwork, respond to student questions on Piazza and CampusWire.

**Undergraduate Teaching Assistant** (UNC Computer Science Department) Aug 2020-May 2023

- Tutored students in Systems Fundamentals (COMP 211) for 5 semesters about C programming and systems concepts (such as data representation, memory management, virtual memory, debugging), under Prof. Kris Jordan (fall 2020), Prof. Ketan-Mayer Patel (spring 2022), and Prof. Brent Munsell (spring 2021, fall 2021, spring 2023).

- Tutored students in Operating Systems (COMP 530) for 1 semester (fall 2022) about advanced systems concepts (such as I/O, virtual memory, scheduling, concurrency, file systems), under Prof. Donald Porter.
- Managed quizzes, midterms, and the final (spring 2023).
- Managed, contributed towards, and wrote labs and associated autograders, using Bash, Python, and C.
- Graded classwork, responded to student questions on Piazza, CampusWire, and GroupMe.
- Collaborated to create a website to archive course material, using HTML, CSS and Bulma.

## Applied Experience

### VMware

*Software Developer Intern for VMware Telco Cloud Platform RAN*

May 2022-August 2022

- Separate complex Flink-based streaker microservice into session collator and KPI composer microservice to increase product reliability, decrease complexity, and support VMware Centralized RIC, a non-real time RAN Intelligence Controller.

*Software Developer Intern for VMware Uhana*

May 2021-August 2021

- Migrated real-time streaming decoder microservice to Flink from Kafka Streams in Java, used to decode raw data from Kafka into protobufs, processing >1 million messages/second in production.

### Official FTB Wiki

*Administrator/Editor*

July 2014-present

- Create and modify templates and other wiki components, using wikitext, Lua, JavaScript, and CSS.
- Develop tools and scripts to deal with various wiki tasks, usually in Ruby, occasionally in Java or Groovy.
- Refine wiki guidelines and guides, manage translation projects, the wiki community and events.
- Write/edit content (>55,000 edits) using MediaWiki, often analyzing Java (or Scala/Kotlin) code to do so.

## Skills and Interests

- Software development (application, systems, languages, web, data, telco), hardware, wikis, peer tutoring.
- **Strong:** Java, C. **Basic:** Rust, Ruby, JavaScript, Groovy, HTML, CSS, Assembly (x86, MIPS, RISC-V), Python, C++. **Some:** SQL (PostgreSQL, SQLite, MariaDB), Lisp, Verilog, Bash, Lua, C#, MATLAB, Mathematica, TypeScript.
- **Strong:** MediaWiki. **Basic:** Git, Linux, Flink, Protocol Buffers, jQuery, Gradle, JUnit, Bulma, Heroku. **Some:** Bazel, Docker, Kubernetes, Kafka, Kafka Streams, Node.js, Vue.js, Nuxt.js, express.js, React.js, Make, OpenCV.
- Mathematics (applied, calculus, algebra, proofs).
- Running (7 marathons), weight training, gaming, geography, international affairs, Spanish (basic).

## Notable Projects

- **NeuroRuler**                      Contribute to Python tool to measure head circumference of MRIs
- **JOS**                                Implemented portions of operating system in C/x86 Assembly
- **MagnumVM**                      Created process virtual machine in Rust, winning 1st in small hackathon
- **Psil**                                Create medium-sized Lisp-like programming language in Rust
- **miniJava**                        Created compiler for subset of Java in Java
- **Tar Heel Calendar**              Created backend for calendar website using express.js and MariaDB
- **Personal website**              Created website, originally in plain HTML/CSS/JS, later Vue/TypeScript
- **Long Fall Boots**                Port/maintain small popular Minecraft mod (~17m downloads) in Java
- **ATT-9001**                        Created tool for scraping tile translations for wiki in Ruby
- **ESAEBSD**                        Created IRC/Discord bots used for automated wiki tasks in Ruby
- **Flaxbeard's Steam Power**      Contributed to popular Minecraft mod (~1m downloads) in Java
- **Nuclear Control 2**                Ported/maintained popular Minecraft mod (~6m downloads) in Java