Abhay Cashikar

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Education

Georgia Institute of Technology, *Atlanta, Georgia* — *August 2018 – May 2023 (expected)*
- M.S. in Computer Science, Computing Systems Specialization — Current Overall GPA: 4.00
- B.S. in Computer Science, System Architecture and Devices Threads — Current Overall GPA: 4.00
- Minor in Japanese

Ladue Horton Watkins High School, *Saint Louis, Missouri* — *May 2018*
- National Merit Finalist, National AP Scholar — Overall GPA: 4.00
- OCA Asian Pacific American Advocates Youth Leadership Award
- Rank of Eagle Scout

Experience

Windows Storage Software Engineer Intern, *Microsoft* — *May 2022 – present*
- Continued development of conversational Microsoft Teams bot from previous internship
- Focusing on improving quality, reliability, and accessibility while adding new bot integrations
- Fixing bugs across Windows products relating to storage drivers like Storport and StorNVMe

Windows Storage, File System and Protection Software Engineer Intern, *Microsoft* — *May 2021 – July 2021*
- Developed a conversational Microsoft Teams bot that fetches Windows build and release data
- Merges multiple development interfaces into one easily accessible location
- Aids developers and PMs in tracking e.g. Windows release check-in deadlines directly from Teams

Azure Software Engineer Intern, *Microsoft* — *May 2020 – July 2020*
- Developed a tool to diagnose connectivity issues between virtual machines hosted on an Azure Stack
- Scans Azure Stack file dumps for a misconfigured firewall rule causing connectivity issues
- Tool will reduce or eliminate all calls to Microsoft regarding issues stemming from misconfiguration of firewall
- Worked in tandem with an intern working from Delhi, India

Peer Tutor, *Georgia Tech Athletics Association* — *January 2020 – May 2020*
- Tutored five student-athletes for an hour every week on linear algebra and multivariable calculus
- Took a course to become a more effective tutor, and was awarded the CRLA Level 2 certification

Embedded Systems Master Peer Instructor, *The Hive Interdisciplinary Makerspace* — *September 2018 – present*
- Help provide a hands-on learning environment to 2500 students a month for classwork and personal projects
- Have written and contributed to Standard Operating Procedures detailing equipment usage and safety
- Training over 30 Peer Instructors on proper setup and usage of microcontrollers such as the Arduino Uno
- Holding office hours and am the main point of contact for all questions and projects related to microcontrollers

Test Automation Engineer, *Centene Corporation* — *May 2019 – August 2019*
- Wrote and modified over 100 C# scripts using Ranorex Studio to test call center web database application
- Used Git and Bitbucket for source control to work alongside other test automation team members
- Attended weekly Scrum meetings and worked in an Agile environment full-time

Research Intern, *Washington University in Saint Louis* — *May 2017 – February 2019*
- Retrofitted a robot cart with a PM sensor; developed manual sampling, autonomous sampling, and autonomous source finding programs using Arduino Nanos and a Bluetooth module connected to an Android device
- Used MATLAB to plot collected spatiotemporal data in a contour plot showing accurate ventilation of PM
- Published paper as first author in Journal of Environmental Engineering, Volume 145, Issue 10 entitled "Particulate Matter Sensors Mounted on a Robot for Environmental Aerosol Measurements"

Peer Notetaker, *Office of Disability Services* — *September 2018 – May 2019*
- Take detailed notes in classes for students who have trouble taking notes while listening to professors lecture

Publications

Cashikar, A., Li, J., & Biswas, P. (2019). Particulate Matter Sensors Mounted on a Robot for Environmental Aerosol Measurements. Journal of Environmental Engineering, 145(10), 04019057

Projects

Custom-Designed Mechanical Keyboard — *January 2022 – May 2022*
- Designed circuit schematic and PCB from scratch using KiCAD, manufactured using JLCPCB
- Used solder paste and oven to solder SMD components to board

- Wrote and compiled custom program in C using QMK Firmware

Strapt Vending, *Create-X* *August 2020 – December 2020*
- Developed a smart, connected period product dispenser
- Planned to have electronic payment capability for a contactless, smooth experience
- Conducted market research by reaching out to people that menstruate and facilities managers

Microsoft Deep Drive Computer Science Workshop, *Microsoft* *June 2020 – August 2020*
- Organized a 10-week virtual coding workshop with other interns for students from low-income communities
- Planned to introduce students to data structures and algorithms, as well as teach soft skills

60% Mechanical Keyboard *January 2020 – March 2020*
- 3D printed and assembled frame; soldered switches, diodes, and wires to a Teensy microcontroller
- Programmed keyboard in C using QMK firmware

Telemetry Subteam, *GT Solar Racing* *August 2019 – December 2020*
- Developed program to collect data from solar car subsystems and send it to an online server over LTE and RF
- Wrote code in Golang to listen for data server-side and plot the data on graphs and maps in real-time

Slack Bot for Analytics Tracking and Response, *The Hive Interdisciplinary Makerspace* *August 2019 – May 2020*
- Working on a Slack bot to manage shift swapping, makeups, part loans, and more for 100+ student volunteers
- Started on Node.js, but after some discussion shifted to Golang because of better support

IoT Device with Microsoft Azure *July 2019*
- Tinkering with an MXChip IoT DevKit
- Set up an IoT Hub using Microsoft Azure, and sent data to it from an MXChip IoT DevKit via VS Code

Cleanify Web Application *April 2019*
- Duplicates an existing Spotify playlist and removes all the songs marked explicit
- Built on Python and the Spotify API, considering moving to JS for easy integration with an HTML front-end

Strategy Algorithm Programmer, *GT Solar Racing* *March 2019 – May 2019*
- Worked on a simulation to generate driving speed suggestions based on cloud cover models using Python
- Simulation will be used to increase efficiency of the solar car at the American Solar Challenge (ASC)

Good Deed Mobile Application *October 2018*
- Created an application at HackGT to help users find volunteer opportunities in their community
- Used React Native to develop an infinite scrolling screen with social posts from volunteer organizations
- Utilized the NCR Site API to store and retrieve information about volunteering events and organizations

KanaGuess Android Application *December 2018*
- Mobile application for Japanese character pronunciation recognition
- Developed Android application for Japanese learners using Android Studio and Java
- Allows users to select character groups to study, and provides feedback on incorrectly identified characters

Skills

Computer Science: Object-oriented programming, embedded systems, operating systems, FPGA development, version control, Agile development environment, data structures, algorithms, REST APIs, malware reverse engineering

Programming Languages: Java, C, C#, Python, Golang, Bash (command line/terminal), Node.js, React Native

Software: Git, GitHub, Visual Studio, Quartus, IntelliJ, IDA Pro, VS Code, Android Studio, Postman, Microsoft Azure, Ranorex Studio, Windows, macOS, Linux, MATLAB, Autodesk Inventor, Slack, Microsoft Office, Microsoft Teams, Adobe Illustrator

Instrumentation: Arduino, Teensy, Terasic DE10-Lite, Raspberry Pi, Tiva-C, Bluetooth module, particulate matter sensor, MXChip IoT DevKit, soldering iron, 3D printer, oscilloscope, waveform generator, power supply, multimeter

Spoken Languages: English (native), Kannada (native), Japanese (intermediate), Spanish (formerly studied)

Music: Classical and modern piano (15+ years of study and self-study)

Clubs: The Hive, GT Solar Racing, Institute of Electrical and Electronics Engineers, PianoForte, Starter Bikes, Robojackets

Leadership

Co-Director of Operations, *The Hive Interdisciplinary Makerspace* *August 2020 – present*
- Continually revising safe makerspace policies amidst a global pandemic
- Organize training of 30+ new volunteers each semester on operation of microcontrollers, oscilloscopes, etc.
- Organize workshops as a means for students to learn hardware and software skills hands-on

Teaching Assistant, *College of Computing* *January 2022 – present*
- Review assignments and labs for 30+ students in CS3651 (Prototyping Intelligent Devices)
- Hold office hours, help students with embedded systems and electronics projects

Resident Advisor, *Georgia Tech Department of Residence Life* *August 2019 – May 2021*

- Was responsible for 50+ residents' safety, engagement, and success in the Georgia Tech community
- Trained on responding to various situations from roommate conflicts to mental health issues to sexual assault
- Organized weekly events to engage residents and promote a diverse and inclusive community

Vice President, *PianoForte Student Pianist Organization* *April 2019 – May 2020*

- Worked to bring more pianos to Georgia Tech's campus and its residents
- Had talks with Dept. of Housing to place high-quality electric keyboards in each of the 49 GT residence halls
- Collaborated with university departments and student organizations to plan and execute recitals and concerts

Auxiliary Array Development Co-Leader, *GT Solar Racing* *August 2018 – May 2019*

- Developed a deployable solar array to charge the solar car when it is parked
- Array consists of eight sections each containing a 4x4 grid of solar cells, for a total of 128 cells

Co-Captain and Mechanical Lead, *FIRST Robotics Team 4330* *August 2016 – May 2018*

- Designed, prototyped, and built robot mechanisms, and delegated work to fellow team members
- Instructed new members on the engineering design process and proper equipment usage