

RACHEL CHAE

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SUMMARY

I have a passion for integrating the Arts into STEM, known as STEAM; I enjoy providing STEAM opportunities for my peers, helping build their unique narratives and emphasizing the importance of communication, leadership, and networking.

Relevant Coursework: Computer Systems, Cybersecurity & International Relations, UIUX, Data Structures & Algorithms

Technical Skills: Python**, Java, C, Processing, HTML/CSS/JS, Vector Tools, HexView, Batch, Embedded C

EDUCATION

Brown University

Sep 2021 - May 2025

Sc.B Computer Science | A.B. International Relations and Public Affairs | GPA: 4.0

Providence, RI

EXPERIENCES & PROJECTS

Magna International

Jun - Aug 2022

Application Engineer Intern

Troy, MI

- Supported Application Engineering activities for Toyota's ECUs, technologies, & programs using software/systems engineering.
- Designed **Value Stream Map for Toyota OEM Secure Key Flow and Provisioning Process**.
- Developed **General Cybersecurity Encryption Program** to Generate CMAC Values Using AES-128 Algorithm and Cipher-Block Chain in **Python**, expanded by each software team to meet client requirements (i.e. Toyota, Mazda, General Motors).
- Co-authored **AUTOSAR Architecture SRS Documentation** and implemented interfaces/ports for Client-Server and Sender-Receiver Communications in the Run Time Environment (RTE) using **Vector applications** and **embedded C**.

National Academy of Engineering (NAE)

Sep 2019 - Present

Chair of EngineerGirl Alumni Network | EngineerGirl (EG) Ambassador

Remote

- Founded **EngineerGirl STEAMers Program** to mentor middle school students how to conduct scientific research and draft engineering research papers for their own STEAM projects.
- Created the **EngineerGirl Alumni Network** to connect past and current ambassadors, build mentorship, and assist in growing the NAE program. Hosted monthly virtual meetings, organized projects, and designed an interactive **website** platform.
- Invited as EG Alumni rep. to NAE Annual Meeting 22 (Irvine, CA): "Honoring Lillian Gilbreth & Excellence in Engineering"
- Represented EngineerGirl at Society of Women Engineers (SWE) & Women's Congressional Policy Institute's STEAM Fair.

Creative Coding Series

Sep 2021 - Present

Founder and Project Lead | Brown/RISD STEAM Secretary & Outreach Board Member

Providence, RI

- Created the **Creative Coding Workshops** through Brown/RISD STEAM, gathering students from interdisciplinary fields at both schools to share the beauty of coding in STEAM and generated large-scale collaborative art exhibitions for the public.
- Coding X Fashion** - Led team of 4 students to code and build male and female attire, leveraging creativity, diversity, & voice.

HONORS & AWARDS

Meta Above and Beyond Computer Science (ABCS) - Fellow

Aug 2022 - Sep 2022

- Selected to participate in workshops and receive mentorship under Meta engineers in preparation for software engineering.

Automotive Women's Alliance Foundation (AWAF) - 2x Scholarship Recipient | Member

Mar 2021 - Present

- Involved in promoting the advancement of women and closing the age gap of female leaders in the automotive industry.

Center for Automotive Research (CAR) MBS - Student Representative

Aug 2022

- One of the few students selected to attend the Management Briefing Seminar in Traverse City, MI to meet with industry leaders from OEM companies, Tier 1 automotive suppliers, research groups, and major stakeholders.

Hugh O'Brian Youth Leadership Foundation -- Youth Cultural Center Award

Dec 2019

- Drafted 20 page independent research paper, "From Food Scraps to Clothes," investigating the effects of solid municipal waste on the environment, reviewing ongoing efforts to reduce food waste, and proposing effective engineering solutions.

Scholastics Writing Competition -- Silver Key

Dec 2018

- "Government's Greatest Secret Unshielded From Its Shadows," critical essay analyzing Snowden's actions and his impact on exposing the US government's intrusion into citizens' privacy (Silver Key, 2018)

National Association for Korean Schools -- Gold Junior Leadership Award

Sep 2019

- Awarded for dedication and leadership displayed through teaching the Korean language and assisting in organizing activities/events