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EDUCATION

SEATTLE ACADEMY

HIGH SCHOOL

June 2022 | Seattle, WA

SKILLS

DIGITAL ART/ FILMMAKING

Experience with multiple aspects of filmmaking including: Screenwriting; Producing; Directing; Editing; Cinematography; VFX

Software: Houdini • Blender • Mari Zbrush • Substance Painter • Nuke Premiere Pro • Davinci Resolve Renderman • After Effects • Audition

OTHER

Robotist: experience in data science, realtime embedded programming, machine learning, and fullstack development.

Expert: Python • Typescript • Svelte

Intermediate: THREE.js • C++ • ROS

Pytorch • Pandas/Matplotlib • Unix

Schematic Capture • Altium • Kicad

I2C • Trapezoidal and Field-Oriented ESC

Design • PIC Programming • MOSFETs

Familiar: C • Android • SQL • Java

Advanced studies including: Proof

Analysis; Linear algebra; Multivariable

Calculus; Quantum Theory; Inverse

Kinematics; Optimization; Machine Learning

PUBLICATIONS

Cabrera, Maria E. et al. ('21). "An Exploration of Accessible Remote Tele-operation for Assistive Mobile Manipulators in the Home". In: *30th IEEE RO-MAN*, pp. 1202–1209. doi:

[10.1109/RO-MAN50785.2021.9515511](https://doi.org/10.1109/RO-MAN50785.2021.9515511).

Cabrera*, Maria E. et al. ('21). "Cursor-based Robot Tele-manipulation through 2D-to-SE2 Interfaces". In: *IEEE/RSJ IROS*, pp. 4230–4237. doi:

[10.1109/IROS51168.2021.9636008](https://doi.org/10.1109/IROS51168.2021.9636008).

Sharif, Ather et al. ('21). "Experimental Crowd+AI Approaches to Track Accessibility Features in Sidewalk Intersections Over Time". In: *ASSETS*, 65:1–65:5. doi:

[10.1145/3441852.3476549](https://doi.org/10.1145/3441852.3476549).

FILMS

DREAMS | DIRECTOR

Advanced Film Class, 2022 vimeo.com/640132971

- Scholastic Art & Writing Awards 2022: **Silver Key**

VFX REEL | DIRECTOR

Advanced Film Class, 2022 <https://vimeo.com/582444930>

- Rookies Young Guns VFX Contest 2020 and 2019: **Finalist**

THE TREASURE | DIRECTOR

Prodigy Camp, 2021 <https://vimeo.com/582617390>

-<(0)>- | DIRECTOR

Advanced Film Class, 2020

<https://www.youtube.com/watch?v=UKOEMBjexo>

- Wicked Wales 2021: **3rd in Freestyle**
- Fresh International Film Festival 2021
- Northwest Highschool Film Festival 2021

CRYSTAL CLEAR | DIRECTOR

Film Class, 2019 <https://vimeo.com/524589933>

- Plasencia Encorto VII International Youth Film Festival: **Best Photography**
- Wicked Wales 2020: **Highly Commended**
- Scholastic Art and Writing Awards 2021: **Honorable Mention**

EXTRA CURRICULARS

FIRST FRC ROBOTICS | '20-'22 TEAM LEAD | '19 CODE LEAD

MATE ROBOTICS | '20-'22 TEAM LEAD | '18-'19 CODE/ELEC. LEAD

Sep 2019 - Present | Seattle, WA

- Led diverse 30+ person team in remote and in person settings (FRC)
- Built functional underwater robot from scratch with multi-node realtime custom communication system and UI (MATE)
- Taught electrical engineering and brushless motor control theory, schematic design, PCB design and microcontroller programming. (MATE)
- Won multiple awards: **World Championship Top 10** in MATE Telepresence Competition; **Rookie All Star Award**, FRC: Redshift 8032; **FRC Dean's List Finalist**; **Regional Competition Top 5** in MATE Pacific Northwest Region

PPE-EXCHANGE | VOLUNTEER/LEAD DEVELOPER

Mar 2020 - June 2021 | Seattle, WA

- Led development of full stack website for Washington State Hospital Association to help hospitals exchange needed PPE during COVID-19.
- Built custom PPE-Distribution algorithm with input from MultiCare

RESEARCH INTERNSHIPS

UW HUMAN-CENTERED ROBOTICS LAB | INTERN

2018; 2020-2022 | Seattle, WA

Worked with **Prof Maya Cakmak** and **Maria E. Cabrera** to develop accessible robot tele-operation interfaces. Helped with data analysis of user studies (Cabrera et al. '21). Led interface design and studies of interface alternatives. Co-first authored (Cabrera* et al. '21).

UW MAKEABILITY LAB | INTERN

2019 | Seattle, WA

Worked with **Ather Sharif** and **Prof Jon Froehlich** on **Project Sidewalk**.
Integrated deep learning-based curb-ramp detection into temporal tracking of
sidewalk quality to help those with mobility impairments. (Sharif et al. ['21](#))