Tobias Weinberg

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— Profile Summary

— Education

Ph.D. Computer Science 2023 - Present, New York City, NY

Cornell University / Cornell Tech

Matter of Tech Lab supervised by Thijs Roumen

My work focuses on enhancing expressivity in augmentative and alternative communication (AAC) systems, particularly in human-AI interaction. I am exploring the balance between agency and efficiency to develop more adaptive and expressive AAC technologies

Bachelor in Science Mechanical Engineering 2019 - 2023, Haifa, Israel

Technion - Israel Institute of Technology

GPA: 86.7/100

Core Courses: Control Theory, Kinematics Dynamics and Control of Robots, Machine Learning For Physiological Time Series Analysis

— Publications at top-tier HCI conferences

Tobias Weinberg, Kowe Kadoma, Ricardo E. Gonzalez Penuela, Stephanie Valencia, Thijs Roumen. Why So Serious? Exploring Humor in AAC Through AI-Powered Interfaces, CHI2025 (in submission)

Amritansh Kwatra, **Tobias Weinberg,** Ilan Mandel, Ritik Batra, Peter He, Francois Guimbretiere, Thijs Roumen. SplatOverflow: Asynchronous Hardware Troubleshooting, CHI2025 (in submission)

— Research Experience

YAI Seeing Beyond Disability / Intern May 2024 - Present, New York, NY

At YAI, I developed and implemented a **data-driven smart home platform** for group homes, equipping staff with real-time insights to enhance care, safety, and efficiency for individuals with disabilities. My role encompassed **full-stack web** development, **IoT integration**, and **real-time data processing and visualization**.

Matter of Tech Lab at Cornell Tech / Research Intern 2022 - 2023, Remote from Haifa, Israel

Working with Prof. Thijs Roumen's lab where we research digital fabrication using ultrasound manipulation. Including contactless fluid 3D manipulation using ultrasound, Unity simulations, and design and engineering of a system for dispensing droplets on-demand.

FAR Lab at Cornell Tech / Research Intern Summer 2022, New York, NY

Working with Prof. Wendy's Ju at FAR lab where we research human-robot interaction. I developed a robot control interface using **computer vision**, **FLASK**, and **MQTT** for human-robot interaction studies. I implemented **ROS navigation algorithms** with **LiDAR** and explored **3D modeling** and **rapid prototyping** for a clay 3D printer.

JERICCO Project at Aerospace faculty / Simulations & Control Engineer Spring 2022, Haifa, Israel

JERICCO is a mission to launch and operate the first ever student-designed nanosatellite in lunar orbit, in a joint effort between the Technion's Aerospace faculty and Israel Aerospace Industries (IAI) set to launch in 2025.

Supervisor: Niko Adamsky (IAI)

I created a system to simulate space climate conditions, communications, and power systems to verify the design choices of the satellite. I designed a **control algorithm** of reaction wheels that will allow the navigation in space.

UAV Center Lab at Technion / Laboratory & Research Assistant 2019 - 2023, Haifa, Israel

As a Laboratory & Research Assistant at the UAV Center Lab, I assembled and **optimized electronics** for autonomous defense drones, **designing and testing** flight-critical components for reliability. I also specialized in **CAD-based 3D modelin**g and **3D printing** to rapidly prototype and produce high-precision parts for lab projects.

— SKILLS

Machine Learning	Full-Stack Developer	Computer Vision	Human-Computer Interaction
Robotics	3D Modeling	Rapid Prototyping	Embedded Systems

Programming languages: Python, C, C#, JavaScript, Java, PHP, Arduino, MATLAB

Mech Eng.: 3D printing, laser cutting, CNC, Mechanical analysis

Design tools: CREO Parametric, Rhino, Solidworks, Fusion 360

— Awards And Honors

Siegel Public Interest Technology Impact Fellowship
Amazon cloud computing grant from Cornell Data Science Center (15K)

Dean's List honors Spring 2021, Winter 2022, and Spring 2023
Faculty of Mechanical Engineering at the Technion Top 15% of the class