Tobias Weinberg

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— Profile Summary

I am a PhD Student at Matter of Tech Lab avised by Prof. Thijs Roumen and co-advised by Prof. Stephanie Valencia from UMD, dedicated to advancing augmentative and alternative communication (AAC) technologies, my research centers on developing systems to seamlessly integrate non-informative speech such as humor, interjection words/sounds, reading poetry, etc, enhancing expressivity for individuals with speech and motor impairments.

Areas of interest: accessibility, AAC, expressive communication, LLMs, human-AI interaction, human-centered machine learning, and HCI.

— Education

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

Cornell University / Cornell Tech
Matter of Tech Lab advised by Prof. 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 Timely Humorous Comments in AAC Through AI-Powered Interfaces. [Project page]
CHI2025 - Best Paper Honorable Mention Award (best 5%)
CHI2025 - Best Demo Award (Jury's Choice)

Amritansh Kwatra, **Tobias Weinberg,** Ilan Mandel, Ritik Batra, Peter He, Francois Guimbretiere, Thijs Roumen. SplatOverflow: Asynchronous Hardware Troubleshooting. [project page]
CHI2025 - Best Paper Honorable Mention Award (best 5%)

— Full Papers Pre-Prints

Shuo Feng , Lavenda Yifan Shan , Xuening Wang , Ritik Batra, **Tobias Weinberg**, and Thijs Roumen. CAMeleon: Interactively Exploring Craft Workflows in CAD. 2024 ArXiv Pre-print. (in submission at DIS)

— Work 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 at Matter of Tech lab, we researched how to leverage 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 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.
Advised: 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 for reaction wheels to allow space navigation.

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 modeling and 3D printing to rapidly prototype and produce high-precision parts for lab projects.

— Awards and Honors

Honorable Mention Award CHI'25 (best 5% of papers) - Why So Serious? Exploring Humor in AAC Through AI-Powered Interfaces

Honorable Mention Award CHI'25 (best 5% of papers) - SplatOverflow: Asynchronous Hardware Troubleshooting

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