



# Arthur Fender Coelho Bucker

Robotician and AI Researcher



abucker@andrew.cmu.edu



arthurfenderbucker.github.io



Pittsburgh, US



May 4<sup>th</sup>, 1999



+1(412)390-7861

## EDUCATION

### Carnegie Mellon University (CMU)

PhD in Robotics 2023-today  
At the roBot Intelligence Group (BIG)

### Technische Universität München (TUM)

MSc. Mechatronics and Robotics 2020-2022  
Thesis led to 2 publications at IROS and ICRA

### Universidade de São Paulo (USP)

BSc. Mechatronics Engineering 2017-2023  
Achieved 2 publications at ICRA 2021

## FELLOWSHIPS

**Fundação Estudar Fellowship** 2024-today  
Leaders Program — 0.05% approval rate

**TCS Presidential Fellowship** 2024-today Presidential Scholarship funded by Tata Consultancy Services (TCS) for outstanding graduate students at CMU

**AUCANI Merit Scholarship** 2020-2022  
USP merit Scholarship for academic exchange programs

## LANGUAGES

Portuguese - Native

English - Fluent

German - Intermediate

Spanish - Intermediate

French - Basic

Chinese - Basic

## OBJECTIVE

I am a passionate roboticist and AI researcher pursuing a PhD in Robotics at Carnegie Mellon University (CMU) at the roBot Intelligence Group (BIG). My research focuses on Robotic Learning facilitated by multimodal human-robot interaction and self-supervised learning.

## EXPERIENCE

### Microsoft — Research Intern

#### Applied Sciences Group (ASG)

May 2024 - Aug 2024

Researched autonomous virtual agents for the Windows OS, contributed to the Windows Agent Arena project, and developed a temporal aware RAG system for Autonomous Agents.

#### Autonomous Systems and Robotics Research Group

Jan 2023 - Apr 2023

Research on foundational models for Robotics & Developed an autonomy stack for indoor monocular drones. [video](#)

### Koya AI Startup — Machine Learning Researcher

Jul 2023 - Aug 2023

Led the research on foundational models knowledge distillation for efficient entity extraction and classification in web-scraped data and product catalogs.

### MIRMI & Microsoft collaboration — Researcher

Nov 2021 - Nov 2022

Led a collaboration between the Munich Institute of Robotics and Machine Intelligence (MIRMI) and Microsoft. Researched on reshaping robotic motion plans using visual-language human interactions. Published at IROS 2022 and ICRA 2023.

### Carnegie Mellon University Internship — Research Intern

May 2020 - Nov 2020

Robotics Institute Summer Scholar (RISS) at the AirLab CMU. Still as an undergrad, I achieved 2 publications at IEEE-ICRA 2021 as 1<sup>st</sup> and 2<sup>nd</sup> author.

### CITI USP, Brazil — Research intern

Aug 2018 - May 2020

Created and developed an embedded system for sea turtle monitoring and organic sensing. Applied concepts of distributed networks, swarm intelligence, and Lora communication. [link](#)

### USP & Aalto University collaboration

Aug 2018 - May 2019

International Product Development in collaboration with Aalto University, Finland. Led a team of 8 on the technical development of a Hydro Acoustics Localization and Communication System for Divers, sponsored by SAAB (€10.000). The project was the cover of the Finnish magazine "Metallitekniikka". [link](#)

### Skyrats - Member

Feb 2018 - Apr 2020

Group of Autonomous drones in USP. Developed computer vision and path planning algorithms for embedded systems. [link](#)

### Grupo Turing - Head of Project Management

Feb 2018 - Aug 2018

A group at USP with the goal of studying, applying, and disseminating Artificial Intelligence Knowledge.

### AB InBev - Summer Intern

Jan 2018 - Mar 2018

Developed computer vision solutions for product identification, Business Intelligence and predictive analytics at the Logistics and Distribution Center in São Paulo.

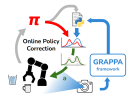
## PUBLICATIONS



### Windows agent arena: Evaluating multi-modal os agents at scale

2024

Published in ICML 2025 | Neurips 2024 Workshop on Safe & Trustworthy Agents (SATA) | Neurips 2024 Workshop on Open-World Agents | AAAI workshop Web Agent Revolution [link](#) [pdf](#)

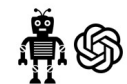


## GRAPPA: Generalizing and Adapting Robot Policies via Online Agentic Guidance

RSS 2025 Workshop on Semantic Reasoning and Goal Understanding in Robotics

[pdf](#) [link](#)

2025



## ChatGPT for Robotics: Design Principles and Model Abilities

Published in IEEE Access Journal | Microsoft Research Tech Report

[link](#) [pdf](#)

2023

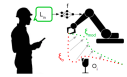


## LATTE: LAnguage Trajectory TransformEr

Published at ICRA 2023 conference.

[pdf](#)

2022



## Reshaping Robot Trajectories Using Natural Language Commands: A Study of Multi-Modal Data Alignment Using Transformers

Published at IROS 2022 conference | IEEE 2022 ICRA workshop on Shared Autonomy in Physical Human-Robot Interaction | IEEE 2022 ICRA workshop on Collaborative Robots and the Work of the Future | Northwest Robotics Symposium 2022

[pdf](#) [video](#)

2022



## Do You See What I See? Coordinating Multiple Aerial Cameras for Robot Cinematography

Published in IEEE International Conference on Robotics and Automation (ICRA 2021)

[pdf](#) [video](#)

2021

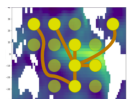


## Batteries, camera, action! Learning a semantic control space for expressive robot cinematography

Published in IEEE International Conference on Robotics and Automation (ICRA 2021)

[pdf](#) [video](#)

2021



## Graph Neural Networks for Improved El Nino Forecasting

Published in NeurIPS 2020 workshop on Tackling Climate Change with Machine Learning & EGU2021 (Proposal paper)

[pdf](#)

2020

## HONORS & AWARDS

TCS Presidential Fellow *Presidential Scholarship funded by Tata Consultancy Services (TCS) for outstanding graduate students at CMU* 2024

Spotlight contribution - IEEE 2022 ICRA workshop on Collaborative Robots and the Work of the Future 2022

Fellow at Fundação Estudar 07/2020 - today  
*Leaders program (approval rate = 0.05%)*

AUCANI merit scholarship recipient 2020  
*USP merit Scholarship for academic exchange programs*

Microsoft AI for Earth Grantee 2020 2020

Summer Exchange in China (Huawei) Oct 2019 - Nov 2019  
*(Seeds for the Future program)*

Winning Team at Hackathon Ambev 2017  
*(Hack the World 2017 SP)*

Best project award and Team leader *at PACE POLI USP 2017 Competition (1st out of 200 teams)*

Brazilian Robotics Olympics Finalist (OBR) 2015 & 2016  
*A retodayative of the State of São Paulo at the national stages of the Brazilian Robotics Olympics.*

Silver medal in the national Theoretical Robotics Olympics (OBR) 2016

Team gold medal at the "International Olympiad Mathématiques sans frontières" 2016