



Arthur Fender Coelho Bucker

Robotist and AI Researcher

✉ abucker@andrew.cmu.edu

🌐 arthurfenderbucker.github.io

📍 Pittsburgh, US

📅 May 4th, 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 focus 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 1st and 2nd 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.

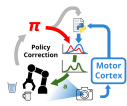
PUBLICATIONS



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

2024

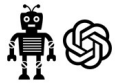
Published in Neurips 2024 Workshop on Safe & Trustworthy Agents (SATA) | Neurips 2024 Workshop on Open-World Agents | ICLR 2025 (under review) [🌐 link](#) [📄 pdf](#)



Grounding Robot Policies with Visuomotor Language Guidance

preprint | ICLR 2025 (under review)

2024



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](#)

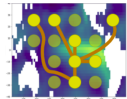
2021



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 *Leaders program (approval rate = 0.05%)* 07/2020 - today

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

Microsoft AI for Earth Grantee 2020 2020

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

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

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

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

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

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