



Nathan Corral

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As a Computer Engineer with a master's specialization in AI and a few years of experience in robotics and software engineering, I will be quick to pick-up safety critical coding paradigms and am eager to advance open source projects at Qt.

Job Experience

- 📌 **Humanoid Robots Lab – University of Bonn** 09.2021 – 09.2022
Research Assistant Bonn, Germany
 - Contributed to research and publications in personalized robot navigation.
 - Programmed the ROS interface for 3D localization of humans from an RGBD camera using deep learning and implemented this on a real robot for autonomous navigation.
 - Used the photo-realistic simulator iGibson (Bullet backend) to generate data for a deep reinforcement learning-based path planning algorithm.
- 📌 **Head Rush Technologies** 12.2019 – 04.2020
Contract Engineer Boulder, USA
 - Contracted to code the firmware on a ATmega328PB Microchip for a proof-of-concept system.
 - Completed field tests and project documentation.
- 📌 **Aqronos** 11.2018 – 12.2019
Software Engineer Denver, USA
 - Designed ROS nodes for visualization of the company's LiDAR prototype.
 - Interacted with a REST API to set parameters on an embedded system.
 - Filtered point clouds and grouped objects using the C++ Point Cloud Library.

Education

- 📌 **Rheinische Friedrich-Wilhelms-Universität Bonn** 10.2020 – 09.2023
M.Sc. *Computer Science* Note: 1.7
Thesis: *Stochastic Transformer for Prediction of Multiple Futures*
- 📌 **University of Illinois Urbana-Champaign** 08.2013 – 05.2017
B.Sc. *Computer Engineering* GPA: 3.55/4.0

Projects

- 📌 **ROS 2 Whisper** 2024
Maintainer [Video](#), [Source](#)
 - Extended this open source project to support boarder-less, live transcription – leading the the release of version 1.4.
 - Implemented the C++ code to place special attention on code efficiency and scalability.
 - Deployed onto an Nvidia Jetson Orin NX for continuous audio transcription.

Skills

Languages	■	· English (Native) · German (fluent, C1 self-assessed)
Strengths	■	· Problem Solving · Cross-Team Collaboration · Reliable · Technical Documentation · Hard Working
Coding	■	· C++ · Python · Bash · C · LaTeX · Java · Go
Software	■	· Linux/Ubuntu · GitHub · Docker · ROS/ROS2 · Hyperstack · AWS EC2
Knowledge	■	· Agile · REST API · Test-driven Development · Multithreading · Computer Architecture/OS fundamentals · Continuous Deployment · Object Oriented Programming · Data Structures · Qt
Robotics	■	· Forward/Inverse Kinematics · SLAM · Path Planning · PID / Model Predictive Controllers · Kalman (Bayes) Filters
Deep Learning	■	· Computer Vision · Generative AI · Large Language Models · Gradient Descent Optimization · Retrieval-Augmented Generation · Reinforcement Learning · Point Cloud Processing · CUDA
Microcontrollers	■	· UART/I2C/SPI · Systems on Chip · Real-Time Systems · Interrupt Triggers · Discrete Signal Processing · Debouncing