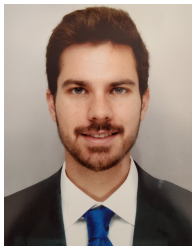

Nathan Corral

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As a Computer Engineer with a strong foundation in IoT and cloud-based solutions, I am eager to advance connected technologies through innovative software development and system integration.

Job Experience

Humanoid Robots Lab – University of Bonn *Research Assistant*
09.2021 – 09.2022 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.

Head Rush Technologies *Contract Engineer*
12.2019 – 04.2020 Boulder, USA

- Contract was to code the firmware on a ATmega328PB Microchip for a proof-of-concept system.
- Completed field tests and project documentation.
- Success from this prototype led to further development, ultimately released as their "Catch-and-Hold Technology".

Aqronos *Software Engineer*
11.2018 – 12.2019 Denver, USA

- Designed ROS nodes for visualization of the company's LiDAR prototype.
- Structured UDP packets and coded both ends of sending and receiving modules.
- Interact with a REST API hosted on the embedded system for configuring hyperparameters.
- Filtered point clouds and grouped objects using the C++ Point Cloud Library.

Education

M.Sc. **University of Bonn** *Computer Science*
10.2020 – 09.2023 Note: 1.7

B.Sc. **University of Illinois Urbana-Champaign** *Computer Engineering*
08.2013 – 05.2017 GPA: 3.55/4.0

Projects

2024 **ROS 2 Whisper** Video, Source

As an extension of this open source project, I implemented boarder-less, live audio transcription. My contribution has led to me being an active maintainer in this project. Written in C++, the code emphasizes:

- Scalability, using both inheritance and composition in object-oriented programming behavior.
- Efficiency, through intentional memory management, thread-safe callbacks and work splitting across multiple nodes.
- Simplicity, in the well thought-out implementation of complex merging algorithms.

Publications

- J. de Heuvel, **N. Corral**, et al. "Learning depth vision-based personalized robot navigation from dynamic demonstrations in virtual reality" *IROS*, 2023

Skills

Languages	· English (Native) · German (C1)
Strengths	· Problem Solving · Cross-Team Collaboration · Reliable · Technical Documentation · Hard Working
Coding	· C++ · Python · Bash · C · LaTeX · Java
Software	· Linux/Ubuntu · GitHub · Docker · ROS/ROS2 · Hyperstack · AWS EC2
Knowledge	· Agile · REST API · Test-driven Development · POSIX · Object Oriented Programming · Data Structures · SQL · DevOps