

# Heiko Carrasco Huertas

MACHINE LEARNING OPERATIONS

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## Jobs

### Stealth Startup

Toronto, Canada

22/06 - ongoing

#### MACHINE LEARNING OPERATIONS

- Responsible for production code and infrastructure deployment of **ML Operations** at cutting-edge biotech startup
- Reduced core compute **pipeline execution time by a factor of 15** while also reducing **cost by 70%**
- Setup all AWS infrastructure** for the company and evaluated new ML developments like AWS Inferentia 2 in collaboration with teams at AWS
- Procured, setup and administrated a **new compute cluster with fully composable GPU infrastructure** using Dell and Liqid hardware
- Established a company-wide configuration system based on **hydra** and **git**
- Trained coworkers to transition from pure research roles to modern software engineering and development, following best-practices like CI, testing, code reviews and VCS

### TU Darmstadt - Department of Computer Science

Darmstadt, Germany

03/19 - 09/19

#### SOFTWARE DEVELOPER

- Developed an open-source **Python** tool to generate web certificates; tool is currently **used by multiple German universities**
- Created and maintained several **web applications** in **Go** and **Python** to support the teaching evaluation for the department

### TU Darmstadt - Department of Computer Science

Darmstadt, Germany

07/17 - 11/21

#### ADMINISTRATIVE ASSISTANT

- Administrated and maintained of the departmental educational and scientific computing resources
- Hands-on experience with **Ansible**, **Gitlab**, **Kubernetes**, and **static site generators**

### TU Darmstadt - Chair of Knowledge Engineering

Darmstadt, Germany

08/16 - 06/17

#### SYSTEM ADMINISTRATOR

- Administrated and extended the **research SLURM cluster** with new GPUs for deep learning applications
- Advised in the planning of the **Lichtenberg II supercomputer** (**100th largest supercomputer** in the world in 2019)

## Education

### Technical University Darmstadt

Darmstadt, Germany

06/2020 - 04/2022

#### M.Sc. IN COMPUTER SCIENCE

- Thesis topic: Adaptive Sampling for Self-Paced Reinforcement Learning
- Thesis supervisors: Pascal Klink, Prof. Jan Peters

### Technical University Darmstadt

Darmstadt, Germany

10/2015 - 06/2020

#### B.Sc. IN COMPUTER SCIENCE

- Thesis topic: Design and Formal Verification of a distributed consensus algorithm for ScalaLoc
- Thesis supervisor: Prof. Guido Salvaneschi

## Projects

### SimuRLacra

[github/SimuRLacra](#)

#### LIBRARY FOR RL AND ROBOTICS EXPERIMENTS

- Development of a new **meta reinforcement learning algorithm** for Sim-2-Real
- Reworked API for usability/interoperability** and implemented extensive unit tests

### ScalaLoc

[github/scala-loci](#)

#### DISTRIBUTED RESEARCH PROGRAMMING LANGUAGE

- Implementation and evaluation of the CHORD algorithm in Scala Loc
- Proposed a design for a future automatic dynamic placement algorithm

## Skills

|                                    |  |
|------------------------------------|--|
| <b>Programming</b>                 | Python, Go, Rust, Scala, Java  |
| <b>System Administration</b>       | Kubernetes, Docker, Ansible, Git, SLURM, MySQL, PostgreSQL, Terraform, AWS CDK                         |
| <b>Machine Learning - Systems</b>  | pytorch, numpy, pandas, matplotlib, JAX, huggingface transformer, hydra, gurobi                        |
| <b>Machine Learning - Concepts</b> | graph neural networks, reinforcement learning, sim2real transfer, mcts, fine-tuning large scale models |
| <b>Languages</b>                   | English (fluent), German (fluent), Spanish   |