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Ralph Aeschimann

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Work Experience

Senior Machine Learning Engineer **Scandit (Zürich, Switzerland)** **08.2021–now**
Tech Lead, Python Guild Lead Python, PyTorch, Django, GCP

- Build prototypes of large-scale object detection and classification pipelines. Validated performance on testset collected from a US retailer and convinced leadership to productify this.
- Lead the development of a visual search product for the cloud. Scaled it up to process >1M images per day and to run pilots for 10 customers. Increased end-to-end accuracy from 40% to 90% within 18 months.
- Own the technical project execution as Tech Lead. Coordinate project direction with Product Management and with other engineering teams. Grew the project squad from 2 to 7 engineers and mentor them.
- Guide the Python development & infrastructure as Guild Lead. Host guild meetings for 40 engineers.

Machine Learning Engineer **Scandit (Zürich, Switzerland)** **10.2019–07.2021**
Machine Learning on edge devices C++, Python, PyTorch, AWS

- Launched real-time ML model for image segmentation which runs on 1M mobile devices every month.
- Trained binary neural nets for deployment on smartphones that run on 30x less memory than conventional nets.
- Developed multi-stage training algorithms that iteratively prune models, reducing model size by half at same quality.
- Introduced Python coding guidelines and a company-wide Request for Change process for Python infrastructure.

Software Engineer **Vizrt (Zürich, Switzerland)** **10.2016-09.2019**
Computer Vision & Machine Learning C++, Python, Caffe2, Qt

- Developed a real-time virtual advertisement overlay system based on computer vision for sports broadcasting.
- Deployed neural nets for video segmentation in live TV productions. Lowered inference time down to 50ms on 4K.
- Automated the training and finetuning of nets for customer-specific deployments.

Research Intern **CSIRO (Brisbane, Australia)** **09.2013-08.2014**
Autonomous Driving C++, Python, ROS

- Experimented on autonomous navigation of large vehicles on industrial sites using stereo cameras.
- Designed vision and LIDAR sensor fusion algorithm for obstacle avoidance.

Education

- **M.Sc. Robotics Engineering,** ETH Zurich. **09.2014–09.2016**
  Courses: Machine Learning, Computer Vision, Data Mining, Control Systems.
- **B.Sc. Mechanical Engineering,** ETH Zurich. **09.2010–07.2013**
  Courses: Modeling & Control, System Identification, Mechatronics.

Technologies and Languages

- Programming Languages: Python, C/C++, CUDA, C#
- Technologies: Docker, GCP, AWS, Django, PyTorch, TensorFlow, Git, Gitlab
- Languages: English (proficient), German (native), Portuguese (native), French (advanced)

Publications

Aeschimann, R.; Borges, P.V.K., “Ground or Obstacles? Detecting Clear Paths in Vehicle Navigation”, ICRA 2015, IEEE International Conference on Robotics and Automation, https://doi.org/10.1109/ICRA.2015.7139747