# Andre Schmeing

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## EDUCATION

### RWTH AACHEN
**M.Sc. BioMedical Engineering**
Graduating 2023 | Aachen, GER
Selected Coursework:

- Artificial Organs I & II
- Medical Engineering I & II
- Comput. Surgical Technologies
- Bio-Process Kinetics

### MIT
**Master Thesis, MEDIA LAB**
2019 | Boston, MA, USA

### RWTH AACHEN
**M.Sc. Automation Engineering**
Graduated 2020 | Aachen, GER
Dean's List Honors (Top 5%)
Selected Coursework:

- Advanced Software Engineering
- Data Science & Machine Learning
- Cybernetics & Systems Theory

### RWTH AACHEN
**B.Sc. Production Engineering**
Graduated 2017 | Aachen, GER

## SKILLS

### SOFTWARE

Proficient:
Python • Java • Javascript • C++
MySQL • MongoDB • GraphQL
HTML • CSS • Angular
OpenCV • OpenGL • ROS • Numba
Docker • AWS • Git

Familiar:
Go • R • C • C# • Bash
GLSL • ST (PLC)
Keras • TensorFlow • PyTorch
MATLAB • Simulink • LaTeX • CAD

### LANGUAGES

Proficient:
German (native) • English(fluent)

Limitedly Proficient:
Dutch • Low German

### HOBBIES

Calisthenics • Travel • Nature • Dining

## EXPERIENCE

### OPT INDUSTRIES | Principal Software Engineer
2019 - Present | Boston, MA

- Leading the PLATFORM group directing development & operation of OPT's digital manufacturing platform and idea-2-product pipeline FactoryOS ( Python, Numba, GLSL, C++, ROS, Angular, MongoDB, GraphQL )
- Optimization of UV-intensity projection strategies for highest precision additive manufacturing DLP photo-polymer curing process speeds & yields
- Development of the .meso file format & algorithms boosting processing speeds by ∼400% and decreasing file sizes by ∼600% compared to industry standards

### MIT MEDIA LAB | Master Thesis
2018 – 2019 | Boston, MA

- Created MetaKnits, a Python & TensorFlow framework for deep learning based generative functional design of knitted textiles with ∼95% accuracy for distortion, elasticity, porosity and damping predictions based on stitch patterns
- Designed and implemented multi-task transfer learning architecture increasing the models learning efficiency resulting in comparable results for new yarn materials and new functionalities with ∼75% and ∼50% less data, respectively

### CYBERNETICS LAB | Research Assistant
2017 – 2018 | Aachen, GER

- Built deep learning models with Python & Keras for anomaly detection in automotive manufacturing detecting ∼75% of metal cracks before they occur
- Created a mini-thesis on categorization of deep reinforcement learning agents after concepts of personality and behavioral psychology forking OpenAI Gym

### BAYER | Software Engineering Intern
2016 – 2017 | Leverkusen, GER

- Led development of automated production data analysis Python microservice to improve comparability of production lines and sites measured in KPIs and introduced system internationally to ease performance monitoring at Bayer
- Designed and built centralized SQL database for contract manufacturing organization (CMO) management of the Bayer Industrial Automation team
- Managed a Lean Six Sigma GreenBelt project implementing a continuous process to boost error & claims processing speeds in the track & trace system

### CHAIR FOR BIOCHEMICAL ENGINEERING | Research Assistant
2015 – 2016 | Aachen, GER

- Developed an automated Bradford protein assay in C++ for a laboratory liquid handling robotic system for high-throughput screening of microorganisms

## LEADERSHIP & AWARDS

### HARVARD BUSINESS SCHOOL ONLINE
- Certificate in Management Essentials

### LEAN SIX SIGMA GREENBELT
- Certified by the Bayer Academy & American Society for Quality

### RWTH BEBUDDY MENTOR
- Mentor and integrate international students at RWTH Aachen

### DEUTSCHLAND STIPENDIUM
- Federal scholarship as part of the Excellence Initiative