



## Master Thesis: Reinforcement Learning (f/m/div)\*

### Job description

Modern production systems tend towards smaller batch sizes, higher product variety and greater complexity. Since humans are often no longer able to act sufficiently as decision-makers in such environments, robust, rapidly adaptable control systems are needed for efficient production planning and control. We are looking for support in form of a master thesis on the topic of Reinforcement Learning (RL) for production flow dispatching solutions in complex wafer fabs. Sounds interesting? Then apply now!

Based on previous work on RL for wafer fab dispatching, further improvements shall be investigated. In your new role you will:

- Focus on **improvement of encoding of observations for reinforcement learning**, e.g. by use of self-attention architectures (e.g. Transformer) or techniques from natural language processing (NLP)
- **Integrate encoded observation vectors** in the existing Infineon simulation and deep learning framework for reinforcement learning
- Collaborate with researchers on **RL solutions for dispatching**

### Profile

You are best equipped for this task if you:

- Will soon finish your Master studies in **Automation Engineering, Computer Science, Industrial Engineering** or something similar
- Already gained experience in **deep learning** and possibly **reinforcement learning** from your studies and are skilled in **Python** and deep learning environments like **Tensorflow** or **Pytorch**
- Bring along an **understanding of production planning and control mechanisms**, possibly in semiconductor production
- Have a natural curiosity to try out **new approaches**, a **highly interacting personality** and a preference for a **collaborative working style**
- Speak **English fluently**

Please attach the following documents to your application:

- CV in English
- Certificate of enrollment at university
- Latest grades transcript (not older than 6 months)
- High school report

### At a glance

Location: **Munich (Germany)**  
Job ID: **363047**  
Start date: **Oct 04, 2022**  
Entry level: **0-1 year**  
Type: **Full time**  
Contract: **Temporary**

Apply to this position online by following the URL and entering the Job ID in our job search:

Job ID: **363047**  
[www.infineon.com/jobs](https://www.infineon.com/jobs)

### Contact

**Annika Wimmer**  
Student Attraction Manager



## Benefits

- **Munich:** Coaching, mentoring networking possibilities; Wide range of training offers & planning of career development; International assignments; Different career paths: Project Management, Technical Ladder, Management & Individual Contributor; Flexible working conditions; Home office options; Part-time work possible (also during parental leave); Sabbatical; On-site creche and kindergarden with 120 spots, open until 6pm; Holiday child care; On-site social counselling and works doctor; Health promotion programs; On-site gym, jogging paths, beachvolleyball, tennis & soccer court; On-site canteen; Private insurance offers; Wage payment in case of sick leave; Corporate pension benefits; Flexible transition into retirement ; Performance bonus; Reduced price for public transport and very own S-Bahn station; Access for wheelchairs

## Why Us

**Part of your life. Part of tomorrow.**

Infineon is a world leader in semiconductor solutions that make life easier, safer, and greener. Our solutions for efficient energy management, smart mobility, and secure, seamless communications link the real and the digital world.

**The Frontend (FE) and Backend (BE)** clusters offer a broad range of manufacturing competence. The portfolio represents Power, Bipolar, Sensor, Passive and Diode technologies as well as CMOS, RF-CMOS and embedded flash technologies. The manufacturing sites are located all over the globe, strongly connected and committed to Operational Excellence with strong customer focus.

*\* The term gender in the sense of the General Equal Treatment Act (GETA) or other national legislation refers to the biological assignment to a gender group. At Infineon we are proud to embrace (gender) diversity, including female, male and diverse.*

