

CAN I COMBINE SCIENCE AND BUSINESS IN A SINGLE JOB?

YES.

We'll show you how at Fraunhofer IIS.

For the »**Broadband & Broadcast**« department in **Erlangen**, the Fraunhofer Institute for Integrated Circuits IIS is currently seeking

Master Thesis Students

for the Topic:

Design Space Exploration of Neural Network Hardware Architectures

The »Broadband & Broadcast« department is active in the areas of mobile communications, embedded ML/AI, Internet-of-Things and automotive communication systems. We take new concepts and algorithms in the fields of communications and digital signal processing (e.g. machine learning) from theory, implement them and test them in simulations and in prototypes in our labs and in the field.

Abstract:

When implementing neural networks in embedded systems or hardware accelerators, specific constraints of the target hardware platforms with respect to performance parameters like chip area, computational throughput, memory needs and power consumption have to be met. Exploring possible implementation alternatives on a target hardware platform given these constraints is an optimization problem. Within the framework of this master thesis new methodologies for the design space exploration of neural network implementations shall be developed based on abstract representations of the neural network model and the target hardware.

Your responsibilities:

- Learning about mapping deep neural networks to hardware accelerators,
- Optimization for different hardware-related objectives,
- Parsing and understanding abstract representation of neural network models and the target hardware.

Your profile: You ...

- understand Deep Neural Network models (mandatory)
- have basic knowledge in Python programming (mandatory)
- have a basic understanding of computer and processor architectures (recommended)

What you can expect from us

- An open and cooperative working environment
- Collaboration in interesting and innovative projects
- Many opportunities to gain practical experience

The thesis will be assigned and carried out in accordance with the rules of your university. For this reason, please discuss the thesis with a professor who can advise you over the course of the project.

The duration for the thesis should be 6 months and it can be started from now on.

Interested?

Please apply for this position using the following link: <https://recruiting.fraunhofer.de/Vacancies/54124/Description/2>.

Applications are possible **in German and English**. Please include a cover letter, your CV and your latest transcripts of records (as PDF) and quote ID number **54124-BBT-051**. Address your application to Nina Wörlein.

Please let us know how you learned about this job opportunity.

Additional information is available on our website: www.iis.fraunhofer.de/en