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COMBINING STUDY AND RESEARCH IS NOT POSSIBLE.

# YES.

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YOU WANT TO SHAPE THE MOBILITY OF THE FUTURE TOGETHER WITH US AND YOU ARE INTERESTED IN ARTIFICIAL INTELLIGENCE? WE AT FRAUNHOFER IVI ARE OFFERING YOU THE OPPORTUNITY TO WRITE A

## MASTER THESIS ON **INFERENCE OPTIMIZATION FOR NEURAL NETWORKS** IN INGOLSTADT

The Fraunhofer **Application Center "Connected Mobility and Infrastructure"** at Technische Hochschule Ingolstadt (THI) focuses on current and future topics of automated and cooperative driving. Diverse competences in the fields of sensor technology, communication and artificial intelligence are combined, fostering synergies with the local industry, and aiming for close cooperation with the city of Ingolstadt and its partners. With research on urban air mobility, the application center is opening further fields of technology in the areas of autonomous systems, digitization in traffic, highly automated flying, as well as vehicle and traffic safety.

We are currently seeking exceptional candidates to undertake their Master's thesis focusing on developing innovative techniques to enhance the efficiency and performance of neural network inference. From image identification to natural language processing, neural networks have transformed a wide range of applications. However, the computing requirements of using these networks in real-time applications pose present challenges. Your research will concentrate on exploring methods that accelerate and streamline neural network inference, allowing them to run efficiently in resource-constrained environments while maintaining high accuracy.

**Your tasks:**

- research and analyze cutting-edge inference optimization methods for neural networks
- design, implement, and experiment with innovative approaches to enhance inference speed and efficiency
- collaborate with research team to validate proposed methods on various real-world use cases

**Your profile:**

- enrolled in a Master's program in computer science, electrical engineering, physics, mathematics, mechanical engineering or related fields
- strong background in machine learning and deep learning
- proficiency in programming languages such as Python and experience with deep learning frameworks (e. g., TensorFlow, PyTorch)
- knowledge in inference optimization techniques and frameworks (e. g., TensorRT)
- passion for research and problem-solving
- excellent communication skills and ability to work collaboratively in a team

**What you can expect:**

- opportunity to work in the field of machine learning and neural networks
- access to state-of-the-art computational resources
- valuable research experience and exposure to real-world practical projects
- flexible working hours
- potential for co-authorship on research papers and conference presentations

Fraunhofer is Europe's largest application-oriented research organization. Our research efforts are geared entirely to people's needs: health, security, communication, energy and the environment. We are creative. We shape technology. We design products. We improve methods and techniques. We open up new vistas.

At its three locations Dresden, Ingolstadt and Berlin, Fraunhofer IVI's researchers develop technologies and concepts in the fields of mobility, energy and security from forward-looking research to practical application. The institute cooperates closely with TU Dresden, TU Bergakademie Freiberg and TH Ingolstadt.

**Please register at the career portal of the Fraunhofer-Gesellschaft and send us your meaningful application:**

**Career Portal**

**If you have any questions, please contact:**

Maximilian Otte
maximilian.otte@ivi.fraunhofer.de
Phone: +49 173 2018855

Fraunhofer Application Center "Connected Mobility and Infrastructure"

Visiting address
Stauffenbergstrasse 2a
85051 Ingolstadt

Postal address
Technische Hochschule Ingolstadt
Esplanade 10
85049 Ingolstadt

**Please state the requisition number: IVI-Hiwi-00717**

**www.ivi.fraunhofer.de/en**