Fraunhofer

IVI

IS IT POSSIBLE TO STUDY AND BUILD A CAREER AT THE SAME TIME?

YES.

We'll show you how at Fraunhofer.

CAN YOU IMAGINE SHAPING THE FUTURE OF CONNECTED MOBILITY WITH US? DO YOU WANT TO EXPAND AND APPLY YOUR KNOWLEDGE ABOUT ARTIFICIAL INTELLIGENCE? THEN COME START YOUR CAREER WITH US AT FRAUNHOFER IVI BY WRITING A

THESIS (MASTER) IN INGOLSTADT:

TRUSTWORTHY FEDERATED DEEP LEARNING IN RESOURCE-CONSTRAINED EDGE ENVIRONMENTS

Federated deep learning has become an emerging paradigm for collaborative learning in large-scale distributed systems with a massive number of networked clients, such as smartphones, connected vehicles or edge devices. Compared to other distributed learning approaches, federated learning allows the clients to train models without sharing raw data, which achieves privacy-preserving machine learning in real application scenarios. This brings great opportunities for deploying AI approaches in future intelligent traffic systems by means of V2X communication networks.

Your profile

– High motivation in creative AI research and its applications in communication networks
– Very good grades in computer science, mathematics or engineering with fundamental knowledge in deep learning
– Knowledge in the field of federated learning is preferable
– Very good programming skills in Python
– Experience with machine learning frameworks, e. g., Pytorch
– Ambition for achieving results in AI research
– Ability to work independently and resourcefully
– Good presentation skills within research discussions

What you can expect
– Versatile and practical projects in cooperative intelligent traffic systems
– Professional supervision
– Motivated teams in an open-minded working atmosphere
– Research infrastructure with a large number of edge computers, sensors and a powerful computer cluster

Fraunhofer is the largest organisation for application-oriented research in Europe. Our thematic fields are oriented towards people's needs: Health, safety, communication, mobility, energy and the environment. We are creative, we shape technology, we design products, we improve processes, we open up new paths.

The Fraunhofer Institute for Transportation and Infrastructure Systems IVI in Dresden employs more than 120 scientists in five departments. The institute cooperates closely with the TU Dresden, the TU Bergakademie Freiberg and the Ingolstadt University of Applied Sciences.

The Fraunhofer Application Center »Connected Mobility and Infrastructure« in Ingolstadt as a new structural unit of the Fraunhofer IVI was founded in 2019 and uses the existing synergies from the competences of the THI and the Fraunhofer IVI, especially in its start-up phase. The plan is to develop further fields of technology in the coming years in the areas of autonomous systems, digitalisation in transport and vehicle and road safety.

If you are interested, please register with the Fraunhofer Career Portal and apply including the following documents:
– Cover letter
– CV
– Bachelor's transcript
– Master's transcript

Career Portal

If you would like to contribute your own ideas about your thesis in this research topic, please also include a two-page thesis proposal in your application.

If you have any questions, please quote the reference number IVI-Hiwi-00695 and contact:

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