"PhD candidate for deep federated anomaly detection in medical imaging with industry experience in automotive and medical domains. I am excited to contribute to the future of machine intelligence and looking forward to the next challenge."



#### PhD Candidate - Helmholtz AI

2020 - PRESENT - MUNICH, GERMANY Dr. Shadi Albarqouni

• Deep federated anomaly detection in medical imaging

### RESEARCH ENGINEER CV/ML - BOSCH CORPORATE RESEARCH

2018 - 2020 (2 YEARS) - HILDESHEIM, GERMANY Dr.-Ing. Niklas Beuter

• Solved challenging perception and behaviour prediction tasks in the field of scene understanding and interior monitoring

#### **RESEARCH INTERN - SIEMENS HEALTHINEERS**

2017 - 2018 (1 YEAR | 7 MONTHS) - ERLANGEN, GERMANY Dr.rer.nat. Olivier Pauly, Dr.-Ing. Florin C. Ghesu

- Improved accuracy and robustness of lung segmentation on chest X-Rays by reducing the number of failures by 50%
- Developed novel recurrent neural networks that share a memory module

#### **RESEARCH INTERN - COMPUTER VISION CENTER**

2016 (6 MONTHS) - BARCELONA, SPAIN Prof. Petia Radeva

• Developed a temporal deep learning model for ego-centric action recognition

#### RESEARCH INTERN - FAU PATTERN RECOGNITION LAB

2015-2016 (1 YEAR) - ERLANGEN, GERMANY

Dr.-Ing. Thomas Köhler, Prof. Dr.-Ing. habil. Andreas Maier

• Increased state-of-the-art image super-resolution by 3.0 dB by implementing a novel, robust multi-frame super-resolution method

#### **RESEARCH ASSISTANT - FRAUNHOFER IIS**

2013-2017 (2 YEARS | 10 MONTHS) - NUREMBERG, GERMANY

Dr.-Ing. Christopher Mutschler

- Implemented cheap and efficient camera-based indoor localisation
- Assured QoS in a complex event processing system (C++)

# **EDUCATION**

#### TUM: TECHNICAL UNIVERSITY OF MUNICH

2020 - (PhD.) - Munich, Germany

• Deep federated anomaly detection in medical imaging

#### FAU: UNIVERSITY ERLANGEN-NUREMBERG

2011 - 2018 (B.Sc., M.Sc., Computer Science) - Grade 1.6 - Erlangen, Germany

• Machine learning and medical image analysis

#### **UAB: UNIVERSITAT AUTONOMA DE BARCELONA**

2016 (EXCHANGE SEMESTER) - BARCELONA, SPAIN

Deep learning and computer vision

## COSMIN IONUT BERCEA

PhD Candidate Deep Federated Learning

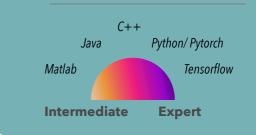
- +49(0) 89 3187 48755
- Street Number, Postel Code, Munich, Deutschland
- cosmin.i.bercea@gmail.com www.linkedin.com/in/cosmin-bercea
- Languages

Romanian: native German: native English: fluent

**Awards** 

Study Grant(2011-2018, e.v. Villigst)

**Skills** 



## **PUBLICATIONS & PATENTS**

- Cosmin I. Bercea, Benedikt Wiestler, Daniel Rueckert, Shadi Albargouni: FedDis: Disentangled Federated Learning for Unsupervised Brain Pathology Segmentation, 2021
- Cosmin I. Bercea, Olivier Pauly, Andreas K. Maier, Florin C. Ghesu: SHAMANN: Shared Memory Augmented Neural Networks, IPMI, Honk Kong, 2019
- Cosmin Bercea, A. Maier, T. Köhler: Confidence-aware Levenberg-Marquardt optimization for joint motion estimation and super-resolution, ICIP, Pheonix, 2016
- Cosmin I. Bercea, Alexander Lengsfeld, Lucas Rego Drumond: Memory Networks for Detecting Anomalies in Vehicle Occupant Behaviour, 2019
- Cosmin I. Bercea, Alexander Lengsfeld, Lucas Rego Drumond: Cooperative Recurrent Neural Networks, 2019
- Alexander Lengsfeld, Philipp Lenz, Lucas Rego Drumond, Cosmin I. Bercea: Pedestrian Behaviour Recognition for Improving the AEB functionality, 2019
- Cosmin I. Bercea, Florin C. Ghesu, Olivier Pauly: Memory Networks for Medical Image Analysis, 2018
- Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Cosmin I. Bercea: A method of viewing direction in a virtual reality environment, 2016