Letter Of Reference

Mr. Ivan Smirnov, born in Minsk, Belarus, April 25, 2004, was employed from August 16, 2023 to January 31, 2024 with the Fraunhofer Institute for Casting, Composite and Processing Technology IGCV in Augsburg in the AI and Digital Engineering team as an intern.

The Fraunhofer-Gesellschaft based in Germany is the world's leading applied research organization. Prioritizing key future-relevant technologies and commercializing its findings in business and industry, it plays a major role in the innovation process. A trailblazer and trendsetter in innovative developments and research excellence, it is helping shape our society and our future. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 76 institutes and research units throughout Germany. Over 30,000 employees, predominantly scientists and engineers, work with an annual research budget of €2.9 billion. Fraunhofer generates €2.5 billion of this from contract research.

The Augsburg-based Fraunhofer Institute for Casting, Composite and Processing Technology, IGCV, conducts production-oriented research and development with a strong focus on practical use and various forms of applications and brings together its expertise in the fields of lightweight casting technology, fiber reinforced compound materials and automated production. The expertise of about 120 scientists ranges from material science to structural mechanics, production engineering and production.

Mr. Smirnov was entrusted in particular with the following tasks:

- Design and implementation of applications for optical quality control using machine learning methods
- Researching, analysing and adapting methods in the field of object detection and segmentation
- Development and implementation of methods for predicting image areas using deep learning and conventional image processing
- Obtaining proficiency in MLOps such as data versioning, experiment management, virtual machines, and data labeling
- Research on image complexity metrics and model accuracy

Mr. Smirnov carried out his tasks in a proactive and self-reliant way. The quality of his output always fulfilled high requirements. Mr. Smirnov was capable of being quick to understand and to master new subjects and problems due to his fast intellectual grasp.

In conclusion we state that Mr. Smirnov fulfilled the assigned tasks to our complete satisfaction. His behaviour towards superiors and colleagues was always exemplary and beyond reproach.
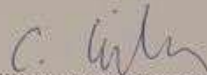
We would like to thank Mr. Smirnov for the successful cooperation and wish him every success for his future career and private life.

Augsburg, January 31, 2024

M.Sc. Clemens Gonnermann
Head of department

M. Sc. Christian Linder
Supervisor