

Dominik Bittner

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PERSONAL PROFILE AND RESEARCH INTERESTS

I grew up in a small farm with its own woodlands and planted my first trees at the age of seven, without realizing that this early experience could serve as the inspiration for my entire career. My passion for discovering technical solutions to various problems resulted in me acquiring a first-class master's degree in applied research in computer science. Whenever I witness the effects from climate change, and contemplate my younger days, a desire to support, improve and advance forest preservation with the help of Artificial Intelligence sprouts in me.

EDUCATION

M.SC. APPLIED RESEARCH IN ENGINEERING SCIENCES 04/2022 - 12/2023

Regensburg University of Applied Sciences, Germany

Relevant Coursework: Statistics & Optimization, Machine Learning, Deep Learning,

Eye Tracking, Software Engineering

Current Grade: 1.3 (first-class)

B.ENG. MECHATRONICS 10/2018 - 07/2022

Regensburg University of Applied Sciences, Germany

Grade: 2.0 (upper second-class)

RESEARCH EXPERIENCE

RESEARCH ASSOCIATE 04/2022 – PRESENT

Regensburg University of Applied Sciences, Germany

Investigation into supporting students in learning through eye tracking and Artificial Intelligence

WORKING STUDENT 04/2022 – 12/2022

Fraunhofer Institute for Integrated Circuits IIS, Germany

Analysis of subjects' physiological data and videos to draw conclusions about their affective states

VISITING RESEARCHER 12/2021 – 03/2022

University of Coimbra, Portugal

Preparation of Bachelor's thesis and publication on GAN-based data augmentation in forestry applications

RESEARCH INTERN 08/2021 – 11/2021

Nottingham Trent University, United Kingdom

Research on artificial data augmentation to improve CNN-based semantic segmentation for forest fire prevention

WORK EXPERIENCE

DEVELOPMENT TRAINEE 09/2020 – 02/2021

Maschinenfabrik Reinhausen, Germany

Exploration of fibre-optic sensor technology for position detection of vacuum tap-changers

Siemens AG, Germany

Apprenticeship and Full-time employment in the production of high voltage converters

RESEARCH OUTPUT AS FIRST AUTHOR

Bittner, D., Ezer, T., Grabinger, L., Hauser, F., & Mottok, J. (2023, September). Unveiling the Secrets of Learning Styles: Decoding Eye Movements via Machine Learning. In Proceedings of the 16th annual International Conference of Education, Research and Innovation ICERI-2023 (t.b.p.).

Bittner, D., Hendricks, R., Horn, L., & Mottok, J. (2023, July). In-depth Benchmarking of Transfer Learning Techniques for Improved Bottle Recognition. In Proceedings of 13th International Conference on Pattern Recognition Systems ICPRS-2023. IEEE.

Bittner, D., Hauser, F., Nadimpalli, V. K., Grabinger, L., Staufer, S., & Mottok, J. (2023, June). Towards Eye Tracking based Learning Style Identification. In Proceedings of the 5th European Conference on Software Engineering Education ECSEE-2023 (pp. 138-147).

Bittner, D., Ferreira, J. F., Andrada, M. E., Bird, J. J., & Portugal, D. (2022, June). Generating synthetic multispectral images for semantic segmentation in forestry applications. In ICRA 2022 Workshop in Innovation in Forestry Robotics: Research and Industry Adoption.

SCHOLARSHIPS

DAAD Rise Program (08/2021 - 11/2021)

DAAD HAW.International (12/2021 - 03/2022)

EXTRACURRICULAR ACTIVITIES

Smoke diver of local voluntary fire brigade

Coach and board member of local football club

Active member of local brass music band

LANGUAGE SKILLS

English: B2, very good spoken and written — **Spanish:** A2, basic communication skills — **German:** Native speaker

TECHNICAL SKILLS

Programming (Python, R, C, C++, Assembly) — Qualitative & Quantitative Research — Data Fusion & Preparation — Exploratory Data Analysis — Statistical Analysis — Machine & Deep Learning — Computer Vision — Eye Tracking

HOBBIES

Farming — Playing music, football and darts — Swimming — Cooking — Reading

REFEREES

Dr. Jürgen Mottok, Sen. Lec. at Regensburg University of Applied Sciences (GER) - juergen.mottok@oth-regensburg.de

Dr. João Filipe Ferreira, Sen. Lec. in Computer Science at Nottingham Trent University (UK) - joao.ferreira@ntu.ac.uk

Dr. David Portugal, Sen. Lec. in Computer Science at University of Coimbra (POR) - davidbsp@isr.uc.pt