

Adarsh Bhandary Panambur

AI Software Engineer | Deep Learning Expert



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🎓 Education

Friedrich-Alexander-University Erlangen-Nuremberg

PhD Research Student

05/2020 – Present | Erlangen, Germany

Friedrich-Alexander-University Erlangen-Nuremberg

Master of Science - Medical Data Engineering (Data and Image Processing)

04/2016 – 06/2019 | Erlangen, Germany

Dr. Ambedkar Institute of Technology

Bachelor of Engineering - Medical Electronics

08/2010 – 06/2014 | Bangalore, India

💼 Professional Experience

Friedrich-Alexander-University Erlangen-Nuremberg (Pattern Recognition Lab)

PhD Researcher

05/2020 – Present | Erlangen, Germany

Thesis: Deep learning algorithms for advanced mammography and breast cancer analysis

- Improved downstream breast cancer classification and detection using **SSL methods in mammography and contrast-enhanced mammography**.
- Sourced and curated multiple public datasets from multiple countries to develop a **comprehensive dataset repository** for mammography containing roughly **100,000 images**.
- Developed **multimodal image-text foundation models** using large vision-language models for enhanced **breast cancer** analysis and **assistive navigation** for the visually impaired.
- Ranked 4th in the **MICCAI ODELIA Challenge** 2025 for **breast MRI malignancy** classification.
- **Supervised** multiple master's **theses** and research **projects** in collaboration with Siemens Healthineers, Siemens AG, and University Hospital Erlangen.
- Contributed to the co-writing of a multi-institution **research grant** focused on federated learning and foundation models.
- Developed **MLOps pipelines** with **Docker** and **SLURM** for automated training, experiment tracking, and reproducible deep learning models.

West China Hospital of Sichuan University

Guest Researcher

07/2024 – 09/2024 | Chengdu, China

- Performed **clinical validation** of Siemens Healthineers' **AI prototype for Breast MRI**, ensuring clinical applicability in cancer **screening and diagnosis**.
- Initiated **projects** to enhance breast cancer screening workflows.
- Streamlined **high quality data annotation** in collaboration with radiologists.

Siemens Healthineers

Doctoral Researcher

05/2020 – 03/2024 | Erlangen, Germany

- Performed **clinical validation** of **AI models for mammography** in an international, cross-department collaboration to enhance breast cancer screening in **Vietnam**.
- Led a project to **optimize hospital workflows** while ensuring regulatory compliance.
- Enhanced **mammogram data annotation quality** through collaboration with radiologists.
- Developed **DL methods** to categorize **positioning artifacts in mammography**.
- **Supervised research projects** through interdisciplinary collaborations.

Working Student & Master Thesis

10/2017 – 03/2020 | Erlangen, Germany

- Developed a **MATLAB-based software prototype** for the **prioritization** of tasks based on **compliance** requirements.
- Conducted detailed **prior art searches** and prepared multiple **successful claim charts**, directly supporting the legal IP team in assessing potential **patent infringements**.
- Evaluated **IoT technologies**, proposing new directions to optimize **clinical workflows**.
- Defined **software specifications** and documented **use cases for blockchain in healthcare**, co-inventing a method to unlock medical devices securely.
- Master's thesis on **deep learning-based lung nodule type classification** in **low-dose CT** using CNNs.

Transcaal Engineers India Pvt. Limited

Senior Engineer (Medical Devices)

03/2015 – 02/2016 | Bangalore, India

- Generated **25% of the company's annual revenue** through **sales of quality assurance** services while building and maintaining a hospital customer base across five Indian states.
- Led a **team of biomedical engineers** in on-site quality assurance projects while **hiring and mentoring new team members**.

Calibration Engineer (Medical Devices)

09/2014 – 02/2015 | Bangalore, India

- Conducted **testing and preventive maintenance of hospital equipment** using **Fluke biomedical test** devices, ensuring compliance with quality standards.

Skills

Programming Languages

Python, MATLAB, C++

AI & ML

Self-supervised learning (SSL), multimodal image-text models, Large vision language models (LVLMs)

Libraries and Frameworks

PyTorch, TensorFlow, Keras, Hugging Face, nnU-Net, OpenCV, MMDetection, MONAI, Albumentations, NumPy, pandas, Scikit-Learn, SciPy, XGBoost, SimpleITK, larvis, SLURM, Axolotl, DeepSpeed, SGLang

Version Control

Git, Docker

Data Modalities

Mammography, Chest X-ray, MRI, Low-dose CT, Natural images, Hematology, Industrial anomaly images, Sales data, Electrocardiogram

Languages, Hobbies and Interests

English — C2 | **German** — B1 |

Hindi — Native |

Konkani — Native | **Kannada** — Native | **Hobbies and Interests** —

Cooking, Padel Tennis, Hiking, Table Tennis

Publications

First Author Publications

Peer-Reviewed Publications

- Panambur AB, Bhat S, Yu H, Madhu P, Bayer S, Maier A. **Attention-guided erasing for enhanced transfer learning in breast abnormality classification.** International Journal of Computer Assisted Rad. and Surgery. 2025 Jan 15:1-8. 
- Bhandary Panambur, A., Bayer, S., & Maier, A. (2025). **Re-thinking Mammography Transfer Learning: The Dataset-Informed Transfer Learning (DITL) Framework for Breast Cancer Screening and Lesion Diagnosis.** In print at the International Conference on Computer Vision and Image Processing (2025).
- Bhandary Panambur, A., Wind, S., Bayer, S. & Maier, A., 2025. **MammoBLIP: End-to-End Mammography Report Generation with Vision-Language Models and Public Multi-Institutional Datasets.** In print at: IEEE Medical Imaging Conference (MIC) 2025, Yokohama, Japan. IEEE 
- Panambur AB, Bhat S, Nguyen T, Bayer S, Maier A (2025). **Towards Foundational Models in Mammography: Leveraging Vision-Language Models for Radiological Reasoning.** Under internal review.
- Bhandary Panambur, A., Nguyen, T.-T., Bayer, S., & Maier, A. (2026). **BE-WISE: Breast MRI Evaluation with Weakly-Informed Slice-level Explanation.** Accepted at the German Conference on Medical Image Computing (BVM 2026).
- Bhandary Panambur, A., Yu, H., Bhat, S., Madhu, P., Bayer, S., & Maier, A. (2024). **Attention-Guided Erasing: A Novel Augmentation Method for Enhancing Downstream Breast Density Classification.** BVM 2024: Proceedings of the German Workshop on Medical Image Computing, Erlangen, Germany. 
- Bhandary Panambur, A., Madhu, P., Bayer, S., & Maier, A. (2024). **Enhancing Downstream Classification of Breast Abnormalities in Contrast Enhanced Spectral Mammography using a Neighborhood Representation Loss.** Accepted at Medical Imaging 2024: Computer-Aided Diagnosis; SPIE. 
- Panambur, Adarsh Bhandary, Prathmesh Madhu, and Andreas Maier. **Effect of Random Histogram Equalization on Breast Calcification Analysis Using DL.** BVM 2022: Proceedings, German Workshop on Medical Image Computing, Heidelberg. Wiesbaden: Springer Fachmedien Wiesbaden, 2022. 
- Bhandary Panambur, A., Fieselmann, A., Biniazan, R., Hümmel, C., Kappler, S., Bayer, S., & Maier, A. (2025). **Towards Improving Mammography Quality: CNN Models for Skin Fold Positioning Error Classification.** Under internal review.

Abstracts & Clinical Validation Studies

- Bhandary Panambur, A., Nguyen, T.-T., Bayer, S., & Maier, A. (2026). **LA-CLIP: Lesion-Aware Vision-Language Pretraining for Mammography via ROI-Guided Contrastive Learning.** Accepted at ECR 2026.
- Bhandary Panambur, A., Bayer, S. , Maier, A., Du X., Huang, J., Lui, S. (2024). **Assessment of AI Performance in Detecting Breast Lesions on MRI: A Retrospective Study in a Chinese Cohort.** Insights into Imaging. ECR 2025.
- Bhandary Panambur, A., Hoang Dinh, A., Chung, L., Le, L. T., Maier, A., Rodriguez Ruiz, A., Andrews, M., Schmitt, B., & Bayer, S. (2024). **AI-Assisted Detection of Malignant Breast Cancer in High Breast Density Cohorts: A Retrospective Comparative Study.** Insights into Imaging. ECR 2025.
- Bhandary Panambur, A., Hoang Dinh, A., Chung, L., Le, L. T., Maier, A., Rodriguez Ruiz, A., Andrews, M., Schmitt, B., & Bayer, S. (2024). **Enhancing mammography screening sensitivity with AI-assistance: Evidence from a Vietnamese study cohort.** Insights into Imaging. ECR 2024. 

Other Publications:

- Panambur AB, Madhu P, Maier A. **Classification of Luminal Subtypes in Full Mammogram Images Using Transfer Learning.** arXiv preprint arXiv:2301.09282. 2023 Jan 23. 
- Bhat, S., Georgescu, B., Bhandary Panambur, A., Zinnen, M., Nguyen, T.-T., Mansoor, A., Elbarbary, K.K., Bayer, S., Ghesu, F.-C., Grbic, S. & Maier, A., 2025. **Exemplar Med-DETR: Toward Generalized and Robust Lesion Detection in Mammogram Images and beyond.** MICCAI 2025, S Korea, 2025. 
- Elbarbary, K., Bhandary Panambur, A., Bhat, S., Bayer, S. & Maier, A., 2025. **MM-DETR: Emulating the Diagnostic Clinical Workflow in Multi-view Multi-modal Mammography Mass Detection.** Deep-Brea3th Workshop, MICCAI 2025, S Korea, 2025.
- Ni, Y., Bhandary Panambur, A., Liu, C., Nguyen, T.-T., Bayer, S., & Maier, A. (2026). **Opportunistic Breast Cancer Risk Stratification from Low-Dose Chest CT Using Multiple Instance Learning.** Accepted at the German Conference on Medical Image Computing (BVM 2026).
- Sheethal Bhat, Awais Mansoor, Bogdan Georgescu et al. **Patch-CLIP - Contrastive Health Record-Image Joint Training with Patch Embedding Loss,** 07 February 2025, PREPRINT available at Research Square. 
- Yu, Hui, Frank Forster, Adarsh Bhandary Panambur, Anna Merino, Andreas Maier, and Gaby Marquardt. **Unstained White Blood Cell Classification Using Deep Learning.** International Journal of Laboratory Hematology, vol. 45, 2023, pp. 132-133. <https://doi.org/10.1111/ijlh.14149>. 
- Bhat S, Mansoor A, Georgescu B, Panambur AB, Ghesu FC, Islam S, Packhäuser K, Rodríguez-Salas D, Grbic S, Maier A. **AUCReshaping: improved sensitivity at high-specificity.** Scientific Reports. 2023 Nov;13(1):21097. 
- Panambur AB, Hager F, Kuth R. **Unlocking a Medical Device.** European Patent EP 3644550 A1. 2020 Apr 29. 