

Simone Bendazzoli

MLOps & Kubernetes Platform Engineer | Medical AI Infrastructure Specialist



Personal Information

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MOTIVATION AND CONTRIBUTION IN MEDICAL AI

Designer and developer of a Kubernetes-based Medical AI platform supporting full AI life-cycle (MAIA) — from data management and model training to validation, deployment, and clinical feedback. Strong hands-on experience in containerized environments, mastering Kubernetes for scalable orchestration and CI/CD pipelines for streamlined and reproducible development. Close collaboration with radiologists, clinical researchers, and AI scientists, to meet operational and research needs of the users of MAIA, turning it into a platform that enables direct interaction between AI development and clinical practice — advancing not just the technology, but also its adoption and real-world impact.

SKILLS

General Fields	Software Development, Platform Development & Deployment, Machine Learning, MLOps, Computer Vision, Medical Imaging, Deep Learning
Operating Systems & Environments	Linux, Windows
Programming Languages	Python, C++, JavaScript, R, MATLAB, Bash
Frameworks & Libraries	PyTorch, TensorFlow, Pandas, MONAI, nnU-Net
Medical Imaging & Analysis	Imaging Pipelines, PACS Integration, DICOM
DevOps / MLOps / Infrastructure Tools	Kubernetes, Docker, Helm, Git, GitHub, CI/CD Pipelines, MLFlow, KubeFlow, JupyterHub, Tmux, OpenShift, Rancher, KubeVirt, NVIDIA GPU Operator, Terraform, Ansible
CI/CD & Deployment Tools	GitHub Actions, ArgoCD, Helm
Monitoring & Logging	Prometheus, Grafana, Loki
Medical AI & Visualization Tools	Orthanc, OHIF, 3D Slicer, PACS
Cloud & Platform Solutions	Google Cloud Platform (GCP), MinIO, NFS
Productivity & Design Tools	MS Office, Inkscape, Blender

PROFESSIONAL EXPERIENCE

2020–2025	PhD in Medical Technology KTH ROYAL INSTITUTE OF TECHNOLOGY AND KAROLINSKA INSTITUTET · Stockholm, Sweden Conducting research in deep learning applications for oncology, with a focus on tumor segmentation, cancer detection, and prognosis. Developing AI-driven medical imaging tools integrated into clinical workflows to enhance diagnostic accuracy and support treatment planning. Collaborating closely with clinicians to translate advanced AI models into practical solutions for patient care.
2021–	Main Developer & Maintainer of MAIA KTH ROYAL INSTITUTE OF TECHNOLOGY AND KAROLINSKA INSTITUTET · Stockholm, Sweden Led the development and maintenance of MAIA, a platform for research collaboration and clinical deployment of AI in healthcare. Worked with a multidisciplinary team to enhance scalability, efficiency, and integration into clinical research and AI applications, bringing the best MLOps practices into a research environment, connected with clinical expertise.

PROFESSIONAL EXPERIENCE

2018–2022

Software Developer

NOVAMIA AB · Stockholm, Sweden 📍

Developed a medical image visualization and processing tool optimized for deep learning inference. Focused on accelerating model execution and real-time analysis using ONNX and TensorRT.

DEGREES

- 2025 **PhD in Medical Technology**
· KTH Royal Institute of Technology and Karolinska Institutet, Sweden 🏛️
- 2017 **MSc in Bioengineering**
· Padua University, Italy 🏛️
- 2015 **BSc in Biomedical Engineering**
· Padua University, Italy 🏛️

PUBLICATIONS

- 2025 *MAIA: A Collaborative Medical AI Platform for Integrated Healthcare Innovation*, NPJ Artificial Intelligence.
- 2025 *MONet-FL: Extending nnU-Net with MONAI for Clinical Federated Learning*, LNCS, Springer.
- 2024 *Lung vessel connectivity map as anatomical prior knowledge for deep learning-based lung lobe segmentation*, *Journal of Medical Imaging*.
- 2024 *Results from the AutoPET challenge on fully automated lesion segmentation in oncologic PET/CT imaging*, *Nature Machine Intelligence*.
- 2023 *Segrap2023: A benchmark of organs-at-risk and gross tumor volume segmentation for radiotherapy planning of nasopharyngeal carcinoma*, *Medical Image Analysis*.
- 2020 *Development and evaluation of a 3D annotation software for interactive COVID-19 lesion segmentation in chest CT*, *arXiv preprint arXiv:2012.1475*.
- 2019 *Automatic rat brain segmentation from MRI using statistical shape models and random forest*, *SPIE*.

CONFERENCES AND WORKSHOPS

- 2022 Oral presentation, *MICCAI*, Singapore: *AutoPET Challenge: PriorNet – lesion segmentation in PET-CT including prior tumor appearance information*.
- 2024 Oral presentation, *CARS*, Barcelona: *BT RetinaUNet – self-supervised framework for enhancing lymphoma detection in whole-body PET/CT*.
- 2025 Technical Workshop at *MAIA-AIDA Tech Days*, <https://minnelab.github.io/MAIA-AIDA-TechDays-Workshop/>
- 2025 Oral presentation, *MICCAI (Decaf Workshop and BraTS Challenge)*, Daejeon, South Korea: *MONet-FL – extending nnU-Net with MONAI for clinical federated learning*.

TECHNICAL CONTRIBUTIONS

- Main developer of **MAIA**, a collaborative Kubernetes-based platform integrating research and clinical workflows for medical AI.
GitHub Link: <https://github.com/minnelab/MAIA>
- Main developer of **MONet**, a MONAI Bundle designed to integrate nnU-Net segmentation models into the MONAI ecosystem, enabling seamless use within active learning workflows, federated learning frameworks, and model deployment tools available in MONAI. **GitHub Link:** <https://github.com/minnelab/MONet-Bundle>
- Developer of the **MONet-FL** framework, built on the MONet Bundle, to conduct federated learning experiments in medical image segmentation. Designed from the ground up on NVIDIA FLARE (NVFlare), enabling scalable and privacy-preserving multi-institutional training.

<https://minnelab.github.io/people/simone> @ simonebendazzoli93@gmail.com