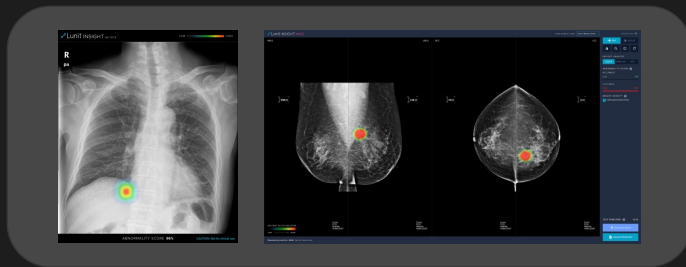


AI Research Team @Lunit

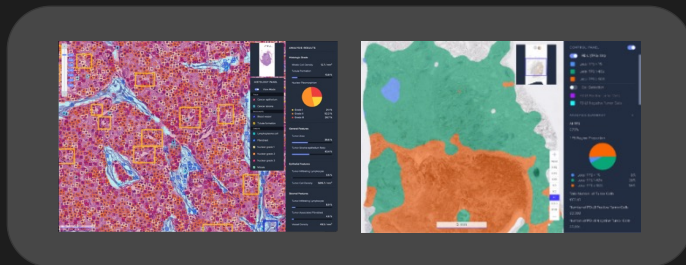
Conquer Cancer through AI

Right Technology for the Right Purpose.
For Us, It Is Saving Lives.

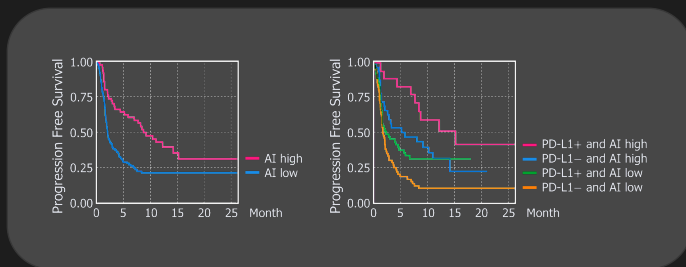
Cancer
Screening



Cancer
Treatment



Improve
Survival
Rate



We want our AI technology to not only perform at the highest level but also to serve 'the right' purposes. For us, this is 'saving lives.'

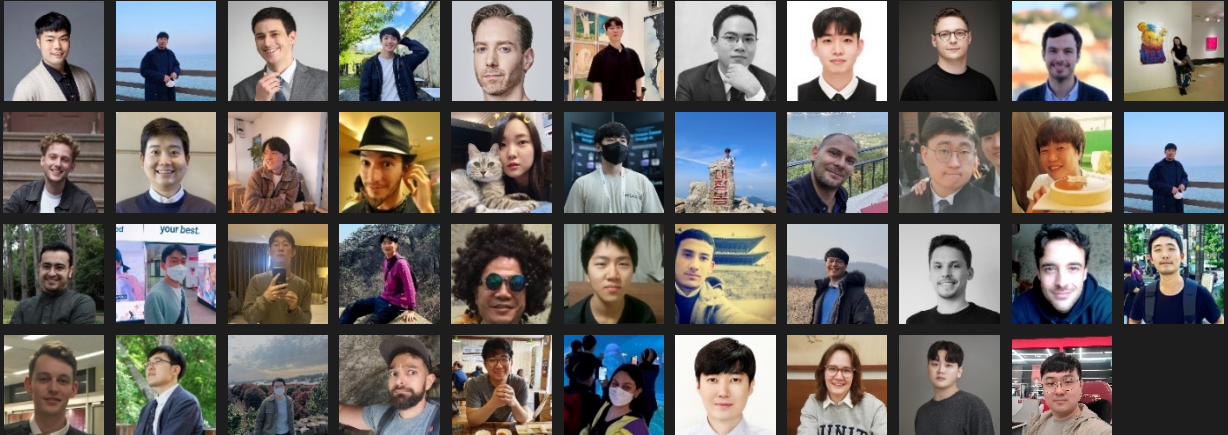
Cancer is one of the leading causes of death. Our AI technology is already being used in **2,000+ hospitals** around the world and is **actually saving human lives from cancer**.

A Small, but **Strong** Team

Top AI Talents from Around the World

40% non-Korean people working in AI Division

Average #citations of 10 senior researchers: 4,138



AI Research Department	Research Scientist	20
	Research Engineer	3
	Data Scientist	4
	Research Intern	3
AI Platform Department	Product Management	3
	Backend Engineer	4
	Frontend Engineer	4
	Data Engineer	1
	ML/DevOps Engineer	5
AutoML Team	Research Scientist	1
	Research Engineer	2
	Research Intern	1

Academic Activities & AI Challenges

Organizing a medical AI Challenge (OCELOT 2023: Cell Detection from Cell-Tissue Interaction) in MICCAI 2023.

Organizing a medical AI tutorial (Tutorial on AI for Medical Image Analysis in Practice) in MICCAI 2022.

Organizing a medical AI Workshop (Visual Recognition for Medical Images) in ICCV 2019.

Ranked 1st place at VisDA Challenge, TASK-CV Workshop, ICCV 2019.

Ranked 2nd place at ACDC@LungHP Challenge, ISBI 2019.

Ranked 1st place at CAMELYON Grand Challenge (post-reopening), ISBI 2017.

Ranked 1st place at Tumor Proliferation Assessment Challenge, MICCAI 2016.

Ranked 5th place at ILSVRC, ILSVRC-COCO Joint Workshop, ICCV 2015.

Ranked 7th place at ILSVRC, ILSVRC Workshop, ECCV 2014.

A Small, but **Strong** Team

Publications in CV/ML (Selected)

Conference Name	Title	First authored	Co-authored	Lunit's product
CVPR Workshop 2015	Multi-scale Pyramid Pooling for Deep Convolutional Representation	○	○	○
ICCV 2015	Attentionnet: Aggregating Weak Directions for Accurate Object Detection	○	○	○
ECCV 2016	Pixel-Level Domain Transfer	○	○	○
MICCAI 2016	Self-Transfer Learning for Fully Weakly Supervised Object Localization	○	○	○
ICLR Workshop 2017	Transferring Knowledge To Smaller Network With Class-Distance Loss	○	○	○
MICCAI Workshop 2017	A Unified Framework For Tumor Proliferation Score Prediction In Breast Histopathology	○	○	○
MICCAI Workshop 2017	Accurate Lung Segmentation Via Network-Wise Training Of Convolutional Networks	○	○	○
ICCV 2017	Two-Phase Learning for Weakly Supervised Object Localization		○	
NeurIPS 2018	Batch-Instance Normalization for Adaptively Style-Invariant Neural Networks	○	○	○
MICCAI 2018	Keep and Learn: Continual Learning by Constraining the Latent Space for Knowledge Preservation in Neural Networks	○	○	○
MICCAI 2018	A Robust and Effective Approach Towards Accurate Metastasis Detection and Pn-Stage Classification in Breast Cancer	○	○	○
CVPR 2018	Distort-And-Recover: Color Enhancement Using Deep Reinforcement Learning	○	○	
BMVC 2018	Bam: Bottleneck Attention Module	○		
ECCV 2018	Convolutional Block Attention Module	○		
CVPR 2019	Learning Loss for Active Learning	○		○
MICCAI 2019	PseudoEdgeNet: Nuclei Segmentation only with PointAnnotations	○	○	○
ICCV Workshop 2019	Photometric Transformer Networks and Label Adjustment for Breast Density Prediction	○	○	○
ICCV 2019	SRM: A Style-based Recalibration Module for Convolutional Neural Networks	○	○	○
ECCV 2020	Learning Visual Context by Comparison	○	○	○
CVPR 2021	Reducing Domain Gap by Reducing Style Bias	○	○	○
CVPR 2021	Weakly-Supervised Physically Unconstrained Gaze Estimation		○	
CVPR 2021	Polygonal Point Set Tracking	○		
CVPR 2022	Interactive Multi-Class Tiny-Object Detection	○	○	○
CVPR 2022	Stereo Depth From Events Cameras: Concentrate and Focus on the Future		○	
ECCV 2022	PT4AL: Using Self-Supervised Pretext Tasks for Active Learning		○	
ECCV Workshop 2022	Variability Matters : Evaluating inter-rater variability in histopathology for robust cell detection	○	○	○
ICLR 2022	Sparse DETR: Efficient End-to-End Object Detection with Learnable Sparsity		○	
MICCAI 2022	Did You Get What You Paid For? Rethinking Annotation Cost of Deep Learning Based Computer Aided Detection in Chest Radiographs	○	○	○
MICCAI 2022	Intra-class Contrastive Learning Improves Computer Aided Diagnosis of Breast Cancer in Mammography	○	○	○
MICCAI Workshop 2022	OOOE: Only-One-Object-Exists Assumption to Find Very Small Objects in Chest Radiographs	○	○	○
MICCAI Workshop 2022	Efficient Neighbor Context-aware Breast Cancer Classification in Digital Breast Tomosynthesis using Transformers	○	○	○
WACV 2023	Improving Multi-Fidelity Optimization With a Recurring Learning Rate for Hyperparameter Tuning	○	○	○
CVPR 2023	OCELOT: Overlapped Cell on Tissue Dataset for Histopathology	○	○	○
CVPR 2023	Benchmarking Self-Supervised Learning on Diverse Pathology Datasets	○	○	○
ICCV 2023	Bayesian Optimization Meets Self-Distillation	○	○	○
MICCAI 2023	Enhancing Breast Cancer Risk Prediction by Incorporating Prior Images	○	○	○

Publications in Medicine (Selected)

Journal Name	Impact Factor	Publications
Journal of Clinical Oncology	50.7	[Park et al., 2022] [Park et al., 2023]
Lancet Digital Health	30.8	[Dembrower et al., 2020] [Kim et al., 2020]
JAMA Oncology	33.0	[Salim et al., 2020]
Radiology	29.2	[Park et al., 2018] [Hwang et al., 2019] [Jang et al., 2020] [Lee et al., 2020] [Nam et al., 2020] [Hwang et al., 2021] [Hong et al., 2022] [Nam et al., 2023] [Lee et al., 2023]
Clinical Cancer Research	13.8	[Jung et al., 2022]
JAMA Network Open	13.8	[Hwang et al., 2020] [Schaffter et al., 2020]
European Journal of Cancer	10.0	[Choi et al., 2022]

Research Scientist

Roles & Responsibilities

- Research and develop deep learning models for medical AI and new medical discoveries
- Perform challenging and creative research in a flexible, positive environment
- Address model-related issues that arise during the product development process
- Stay up-to-date with the latest research trends in CV/ML and data-driven medicine
- Contribute to academia by publishing excellent research papers

Necessary Qualifications

For a PhD degree holder (or expected to graduate)

- Field: Medical Imaging or Computer Vision
- Strong background in Deep Learning / Applied ML / CV.
- (Preferred) Publications: 2-3 peer-reviewed publications at a top-tier conference (CVPR/ECCV/ICCV/NeurIPS/ICML/ICLR/MICCAI) or journal (Nature Medicine, JAMA sub-journals/Radiology/MedIA/TMI/TPAMI/IJCV/JMLR)

For a Masters degree holder (or expected to graduate)

- Field: Computer Science, Electrical Engineering or related field
- Strong background in Deep Learning / Applied ML / CV.
- (Preferred) Publications: 1 or more peer-reviewed publications at a top-tier conference (CVPR/ECCV/ICCV/NeurIPS/ICML/ICLR/MICCAI) or journal (MedIA/TMI/TPAMI/IJCV/JMLR)

Software Engineering Skills

- Proficient in Python and use of frameworks such as PyTorch and Tensorflow
- Experience using git with multiple collaborators (E.g. git flow workflow)
- Familiar with container-based software development (E.g. docker)
- Contributions to open-source code repositories in CV, ML and related areas
- Ability to write clean, consistent and well-documented code

Compensation and Benefits

- [Top compensation package in the industry](#)
- Work-life balance (flexible working hours, flexible work-from-home, unlimited holidays)
- Meals paid by the company (lunch and dinner)
- Comprehensive medical screening (yearly)
- Healthcare expense support (\$1,000 yearly)
- Accident insurance covered for all employees
- Patent incentive program
- Top-tier conference trip (CVPR/ECCV/ICCV/NeurIPS/ICML/ICLR/MICCAI) supports (yearly)

Research Engineer

Roles & Responsibilities

- Analyze and improve the performance of AI models by:
 - Applying state-of-the-art methods, that are presented in recent CV/ML papers
 - Applying AutoML methods or other hyper-parameter engineering techniques
 - Utilizing advanced image processing techniques to improve the generalization performance of AI models
 - Adding updated training samples and annotations to the training dataset
- Apply expert coding skills to the AI research and product frameworks:
- Analyzing and improving the efficiency, scalability, and stability of training, validation, and inference pipeline
- Adapting the training pipeline to best exploit modern parallel environments such as distributed clusters and NPUs in a cloud environment.
- Support internal large-scale inference activities
- Fast-prototyping of AI model for new medical problems

Necessary Qualifications

- BS, or MS, or PhD degree in computer science or related field
- 3+ years of research or development experience based on deep learning methods
- 3+ years of experience in deep learning framework (e.g., PyTorch, TensorFlow)
- Outstanding programming skills demonstrated via course grades, demos, or contribution to open sources
- Familiarity with Git and experience in collaborating with Git

Preferred Experiences

- Software engineering achievements demonstrated via contributions to open source projects or coding competitions
- Experience in challenging the state-of-the-art in Computer Vision problems
- Experience in processing (bio)medical data
- Experience in collecting and processing large-scale real-world data
- Experience in modern parallel environments such as distributed systems or NPUs
- Experiences in the AI industry
- Research engineering achievements demonstrated via AI competitions
- Academic achievements (top-tier conference/journal papers) in the AI field

Compensation and Benefits

- [Top compensation package in the industry](#)
- Work-life balance (flexible working hours, flexible work-from-home, unlimited holidays)
- Meals paid by the company (lunch and dinner)
- Comprehensive medical screening (yearly)
- Healthcare expense support (\$1,000 yearly)
- Accident insurance covered for all employees
- Patent incentive program
- Top-tier conference trip (CVPR/ECCV/ICCV/NeurIPS/ICML/ICLR/MICCAI) supports (yearly)

Research Intern

About Research Internship

The intern will be integrated in the Research division and the topic can be either strongly research-oriented, or aligned with product-oriented research, depending on the current needs and interest of the applicants. The intern will be mentored by at least one of Researchers of the department, and have the chance to participate in a real-world research environment.

Roles & Responsibilities

- Perform research autonomously on state-of-the-art computer vision or medical image analysis, e.g. semi-supervised learning, domain generalization, etc.
- Contribute to product features
- An ideal outcome is a completed research project (for instance, in the form of a scientific paper submitted to a top-tier CV/ML/Medical Imaging conference) and/or presentation on a new product feature

Necessary Qualifications

- Undergraduate/Master's/Ph.D. student in computer science, electrical engineering, artificial intelligence, biomedical engineering or a related field
- Knowledge of AI demonstrated through coursework, challenges or open source projects
- Excellent programming skills and experience with mainstream Deep Learning libraries, e.g., PyTorch, TensorFlow.
- Minimum of 3 months consecutive on-site availability

Preferred Experiences

- Currently pursuing graduate studies (e.g., M.Sc. or Ph.D.)
- Papers in top-tier journals or conferences (e.g., CVPR, NeurIPS, MICCAI, ICCV, TMI, PAMI, Medical image analysis)
- Development experience in real world applications of AI (e.g., computer aided diagnosis, face detection, natural language processing, etc.)
- Interest in applications of AI to health care
- Contributions to relevant open source projects
- Achievements in CV/ML/Medical Imaging competitions

Join Us, You Too Can **Save Lives**

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3. If you have any questions, please feel free to email apply@lunit.io

