ROKAS BENDIKAS

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EDUCATION

01/2024 – 07/2024 **Visiting Scholar, University of California San Diego**
Project: Learning and deploying spatially aware latent world models in real-world unstructured environments.
Supervisors: Prof. Hao Su.

07/2021 – 07/2025 **Doctor of Philosophy (PhD) in Foundational AI, University College London (UCL)**
Thesis: Learning spatially aware latent world models for visuomotor control in unstructured environments.
Supervisors: Prof. Danail Stoyanov, Dr. Dimitrios Kanoulas.

07/2020 – 07/2021 **Master of Science (MSc) in Computing (AI + ML), Imperial College London**
Thesis: Imagination augmented Deep Q-Network: End-to-end robotic control in dynamically complex environments.
Supervisors: Prof. Andrew Davison, Dr. Edward Johns.

07/2017 – 07/2020 **Bachelor of Engineering (BEng) in Biomedical Engineering, King's College London**
Thesis: Investigating the effects of atrial anatomy and fibrosis on atrial fibrillation mechanisms using biophysical modelling and deep learning.
Supervisors: Prof. Steven Niederer, Dr. Caroline Roney.

WORK EXPERIENCE

Since 01/2023 **CTO and Co-founder, InHive, London**
Founded a start-up, helping students find compatible flatmates via profile matching in latent space (300+ users).
Driving the development and maintenance of the platform and ML.

06/2022 – 09/2022 **Software Engineering Intern (Deep Learning), MathWorks, Cambridge**
Implemented a standard a deviation method, allowing to create custom normalization layers.
Increased neural network block inference time in Simulink by 95% by refactoring ML backend.

01/2022 – 04/2022 **Graduate Teaching Assistant, Reinforcement Learning, UCL & DeepMind**
Module taught by Prof. Hado Van Hasselt (UCL, DeepMind).

09/2021 – 12/2021 **Graduate Teaching Assistant, Robotic Control Theory and Systems, UCL**
Module taught by Dr. Francisco Vasconcelos (UCL).

11/2018 – 05/2020 **Research Assistant, CEMRG, St. Thomas Hospital, London**
Developed a semi-automatic ML pipeline for atrial DT-MRI/LGE data segmentation and registration.

SELECTED PROJECTS

T-NeRF: Learning spatially aware latent world model via Trajectory-conditioned NeRF decoder.
Authors: Bendikas, Rokas*; Hadjivelichkov, Denis *; Kanoulas, Dimitrios; Stoyanov, Danail.
Our model produces latent state representations, that contain semantic 3D scene data. Such representations enable the training of a model-based RL agent, capable of functioning in environments with occlusions. *To be submitted: ICML 2024.*

Imagination-augmented DQN: End-to-end robotic control in dynamically complex environments.
Authors: Bendikas, Rokas.
Imagination-augmented DQN that operates in dynamically complex environments.
Supervised by: Prof. Andrew Davison; Dr. Edward Johns. *Accepted: MSc Thesis.*

SELECTED PUBLICATIONS

Learning Needle Pick-And-Place without expert demonstrations
Bendikas, Rokas; Modugno, Valerio; Kanoulas, Dimitrios; Vasconcelos, Francisco; Stoyanov, Danail.
Robotics and Automation Letters (RA-L) + ICRA, 2023, doi: 10.1109/LRA.2023.3266720

Constructing a human atrial fibre atlas
Roney, Caroline H.; Bendikas, Rokas [...] Niederer, Steven A.
Annals of Biomedical Engineering, 2021, doi: 10.1007/s10439-020-02525-w

In silico Comparison of Left Atrial Ablation Techniques That Target the Anatomical, Structural, and Electrical Substrates of Atrial Fibrillation
[...]; Bendikas, Rokas; [...]; Niederer, Steven A.
Frontiers in Physiology, 2020, doi: 10.3389/fphys.2020.572874

COMPETITIONS

Entrepreneur First London AI FIND Hackathon (1st place)
Our team achieved 1st place among 10+ groups, developing an AI-driven, explainable patient discharge summary generator, projected to save the NHS £648m annually. I took a leadership role as the team captain.

TECHNICAL SKILLS

Languages: Python (strong), JavaScript (strong), MATLAB (strong), C++ (medium), HTML (medium), CSS (medium), SQL (basic), Lua (basic). Machine Learning: PyTorch, Numpy, OpenCV, Matplotlib, Scikit-learn, Tensorboard, Pandas. Simulators: PyBullet (strong), Isaac (strong), MuJoCo (medium). Web Development: React, NextJs, Django, Supabase, Tailwind, Shadcn, Postgres, Redis, Vercel. Others: ROS, Git, bash, Linux, CUDA.