AIDAN SCANNELL

Machine Learning Researcher

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🔗 aidan-scannell-82522789/   🚗 UK Driving Licence

"Machine learning (ML) researcher with strong analytical skills and expertise in machine learning, reinforcement learning and robotics. Advocate of open-source software with a demonstrated track record of bringing ideas to life quickly and effectively through object-orientated and functional programming. Extensive knowledge of modern machine learning as well as hands-on experience solving real-world problems."

SKILLS

Python   PyTorch   JAX   TensorFlow   TensorFlow Probability   GPflow   GPyTorch   GPy   NumPy   SciPy

Pandas   Docker   Slurm   W&B   hydra   Git/GitHub   Sphinx   LaTeX   Linux   Java   C++   ROS

EXPERIENCE

Postdoctoral Researcher (with Prof. Joni Pajarinen & Prof. Arno Solin)
Aalto University | Finnish Center for Artificial Intelligence (FCAI)

📅 July 2022 – Ongoing   📍 Helsinki, Finland

Received two-year FCAI postdoc funding to sit jointly in the Robot Learning Lab and the Machine Learning Group.
- Experienced cross-disciplinary researcher demonstrated by synergising techniques from probabilistic machine learning, reinforcement learning and robotics.
- Leadership skills demonstrated by leading FCAI's "Long-term decision making and transfer between tasks" team.
- Good teamwork skills demonstrated through research collaborations.
- Strong programmer with extensive experience in Python machine learning (ML) libraries (PyTorch/JAX/TensorFlow).
- Experienced configuring and training large machine learning experiments on HPC clusters.
- Comfortable documenting code (Sphinx), writing unit tests, collaborating, and contributing to open-source code (GitHub).

Lecturing   Supervision   Reinforcement learning   Bayesian deep learning   Gaussian processes

Co-lecturer & Lead Teaching Assistant @ **Aalto University**

📅 Sept 2022 – Ongoing   📍 Helsinki, Finland

- Co-lecturer on advanced course on Gaussian processes and lead teaching assistant for Reinforcement Learning course.
- Established myself as a confident, enthusiastic and effective teacher, able to engage and develop students' learning.

Lecturing   Communication   Active listening   Teaching

PhD Researcher (Supervisors: Prof. Arthur Richards & Prof. Carl Henrik Ek)
CDT in Future Autonomous and Robotic Systems, University of Bristol/Bristol Robotics Laboratory

📅 Sept 2018 – Ongoing   📍 Bristol, UK

Awarded a four-year PhD scholarship including a taught MRes year.
- Solid understanding of hardware and software systems for robotics.
- Hands-on experience applying learning algorithms to robotic systems (e.g. quadcopters/manipulators).
- Effective communicator demonstrated through publications and invited talks.

Probabilistic modelling   Gaussian processes   Variational inference   Riemannian geometry   Robotics

Teaching Assistant @ **University of Bristol**

📅 Sept 2018 – May 2021   📍 Bristol, UK

- Teaching assistant for *(i)* Machine Learning, *(ii)* Robotic Systems and *(iii)* Intelligent Information Systems courses.

VOLUNTEERING

Finnish Center for Artificial Intelligence Team Lead - Long-term decision making and transfer between tasks
Finnish Center for Artificial Intelligence (FCAI)

📅 Sept 2022 - Ongoing 📍 Helsinki, Finland

- Lead a team of researchers working on reinforcement learning.
- Created an environment for researchers to form collaborations.
- Effective communicator demonstrated by weekly presentations.

Leadership | Communication | Teamwork Skills

Cohort Representative
FARSCOPE CDT

📅 Sept 2018 - May 2022 📍 Bristol, UK

- Represent myself and my CDT peers in management meetings.
- Communicate information between students and management.

Communication | Interpersonal Skills

INVITED TALKS

Neural Networks as Sparse Gaussian Processes for Sequential Learning
Int. Workshop of Intelligent Autonomous Learning Systems

📅 15 Aug 2023 📍 Darmstädter Haus, Austria

Model based reinforcement learning under uncertainty
ML at the Cambridge Computer Lab (ML@CL)

📅 23 Feb 2023 📍 University of Cambridge

Synergising Bayesian Inference and Probabilistic Geometries for Robotic Control
Cognitive Systems - Technical University of Denmark (DTU)

📅 18 March 2021 📍 Zoom

Presentation skills | Communication | Outreach

👥 PUBLICATIONS

👥 Publications

- Aidan Scannell, Carl Henrik Ek, and Arthur Richards (Apr. 2023). "Mode-constrained Model-based Reinforcement Learning via Gaussian Processes". In: *AISTATS*. PMLR.
- Aidan Scannell, Riccardo Mereu, et al. (Oct. 2023a). *Function-space Parameterization of Neural Networks for Sequential Learning*.
- – (July 2023b). "Sparse Function-space Representation of Neural Networks". In: *ICML 2023 Workshop on Duality for Modern Machine Learning*.
- Aidan Scannell (2022). "Bayesian Learning for Control in Multimodal Dynamical Systems". PhD thesis. University of Bristol.
- Aidan Scannell, Carl Henrik Ek, and Arthur Richards (June 2021). "Trajectory Optimisation in Learned Multimodal Dynamical Systems Via Latent-ODE Collocation". In: *ICRA*. IEEE.

EDUCATION

PhD in Robotics and Autonomous Systems
University of Bristol

📅 Sept 2018 - June 2022

PhD Thesis:
- 📄 Bayesian Learning for Control in Multimodal Dynamical Systems

Taught MRes Year:
- First class honours
- 📄 Extending BDI Agents to Model and Reason with Uncertainty

Summer Schools:
- Gaussian Process and Uncertainty Quantification Summer School 2019
- Machine Learning Summer School 2019

MEng in Mechanical Engineering
University of Bristol | First Class Honours

📅 Sept 2012 – June 2016

- Graduated in top 10% of cohort

REVIEWING

- International Conference on Neural Information Processing Systems (NeurIPS)
- International Conference on Learning Representations (ICLR)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- Conference on Robot Learning (CoRL)
- International Conference on Robotics and Automation (ICRA)
- IEEE Transaction on Pattern Analysis and Machine Intelligence
- IEEE Robotics and Automation Letters (RA-L)

REFERENCES

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