Preliminary Program 2023

Speaker	Topic	Affiliation	Abstract	Date	Profile link
Week 1					
John Shawe-Taylor	The Foundations of Kernel Methods for Machine Learning	IRIS: Chair of Computational Statistics and Machine Learning Director of the Centre for Computational Statistics. Dept of Computer Science. Faculty of Engineering Science.		09 & 10 Jan	https://iris.ucl.ac.uk/iris/browse/profile?upi=JSHAW87
Ulrich Paquet	Machine Learning for Recommender Systems and Online Advertising	DEEPMIND: Research Scientist at DeepMind.		09 & 10 Jan	https://ulrichpaquet.com/
Sebastian Bodenstein	AlphaFold	DEEPMIND: Research Engineer at DeepMind.		09,10 & 11 Jan	https://za.linkedin.com/in/sebastianbodenstein

Willie Brink	Workshop: Introduction to deep Neural Networks	UNIVERSITY OF STELLENBOSCH : An associate professor of Applied Mathematics in the Faculty of Science at Stellenbosch University.		09, 10 & 11 Jan	https://appliedmaths.sun.ac.za/~wbrink/
Ferenc Huszár	Theory of Deep Learning or Understanding Generalisation in Deep Learning this time around. I focus on questions of stochastic optimization in overparametrized models these days, and I run a course on 'Theory of Deep Learning' in Cambridge.	UNIVERSITY OF CAMBRIDGE: Senior Lecturer in Machine Learning at the University of Cambridge.		11& 12 Jan	https://www.inference.vc/about/
Naila Murray	Training deep vision models in low-data regimes.	FACEBOOK, AI RESEARCH: Senior Research Engineering Manager.	Abstract: Large-scale vision models, pre-trained on vast quantities of often unlabelled data, give state-of-the-art performance when fine-tuned for a wide variety of downstream tasks. For these downstream tasks, the amount of training data available is usually orders of magnitude less than what was used during pre-training. And in many cases, there is little to no labelled data available. In this lecture series, I first present self-supervised approaches to visual model training. I will	11,12 & 13 Jan	https://ece.princeton.edu/people/naila-murray-07

			then discuss approaches to leveraging pre-trained models for vision tasks in low-data regimes.		
David Forsyth	Computer vision for autonomous vehicles.	UNIVERSITY OF ILLINOIS: Fulton Watson Copp Chair in Computer Science.		12 & 13 Jan	https://cs.illinois.edu/about/people/faculty/daf
Sara Beery	Domain adaptation and generalization from both a theoretical and an applied point of view.	MIT EECS' Faculty of AI and Decision Making and CSAIL: Assistant Professor.		12 & 13 Jan	https://beerys.github.io/
Week 2					
Prof. Dr. Nicu Sebe	1. Learning to Adapt: Adapting Deep Models to Domain and Semantic Shift. 2. Deep Generative Models for Image/Video Generation. 3. Playable Video Generation and Playable Environments	UNIVERSITY OF TRENTO: Leader of Multimedia and Human Understanding Group, Dept. of Information Engineering and Computer Science.		16 &17 Jan	https://disi.unitn.it/~sebe/
Dr. Xavier Alameda-Pineda	Unsupervised Probabilistic Learning with Latent Variables: from the	INRIA: National Institute for Research in Digital Science and Technology. Research	Abstract: In this series of lectures, we will focus on probabilistic models and associated algorithms for	16 & 17 Jan	http://xavirema.eu/

	Expectation-Maximisation Algorithm to Deep Variational Models.	Scientist at Inria, and the Leader of the RobotLearn Team.	unsupervised learning. We will first present the expectation-maximisation algorithm, which is a foundational tool in the field, allowing maximum likelihhood estimation of the model's parameters as well as inference of the latent variables. The limitations of the EM algorithm, mainly the need for a closed-form posterior distribution, will motivate the need for approximate techniques, among which we can find variational inference. The coupling with deep learning, mainly via variational auto-encoders, will then appear as a natural crossing between probabilistic modeling and deep unsupervised learning. Applications as well as computational aspects of these models will also be discussed.		
Inga Strümke	XAI.	NTNU: Norwegian University of Science and Technology. AI researcher, public speaker & particle physicist.		16 & 17 Jan	https://no.linkedin.com/in/strumke
Matthias Bauer	Probabilistic-generative modelling and would cover either all or some of the following: VAEs (with a bit of background on variational inference + potentially probabilistic PCA), normalizing flows,	DEEPMIND: Research Scientist at DeepMind.		18 & 19 Jan	edin.com/in/matthias-bauer-9a1b60159/?originalSubdomain=de

	and potentially an outlook/connection to diffusion models.				
Prof. Matt Jones	Lectures 1: The Robots are Coming, be Afraid! How to ight back with Human-Centered Machine Learning Approaches	SWANSEA UNIVERSITY: Personal Chair, Computer Science.	While many researchers and developers are excited about the possibilities of ML, everyday folk are often worried about the impact on their lives and livelihoods. We consider these concerns and use them to motivate the need for human-centered AI design and development approaches.	18 & 19 Jan	https://www.swansea.ac.uk/staff/matt.jones/
	Lecture 2: Methodologies for Diversifying Perspectives in ML Design and Development.		ML systems have been criticised for biases caused by both the training data and model structures. In this second lecture, we discuss ways of involving richer perspectives from both the Global South and Global North in the development cycle.		
	Lecture 3: Case Study: Speech Interactions designed and developed using human-centred machine learning approaches.		Speech Interactions designed and developed using human-centred machine learning approaches. In this last lecture, we bring everything together by showing how spoken language systems developed with Global South communities can not only provide new forms of service, but provide challenges to conventional ML tools and techniques.		

Prof. Dr. Steve Kroon	Normalizing flows and VAEs.	UNIVERSITY OF STELLENBOSCH:Associate Professor, Computer Sciene department.		19 & 20 Jan	https://kroon.cs.sun.ac.za/
Prof. Bettina Berendt	1.AI Ethics: Some Important Concepts. 2.AI Ethics: Calling Bullshit. 3.AI Snake Oil.	TECHNISCHE UNIVERSITÄT BERLIN: Professor for Internet and Society at the Faculty of Electrical Engineering and Computer Science, Director of the Weizenbaum Institute for the Networked Society, and guest professor in the Declarative Languages and Artificial Intelligence Group DTAI of the Department of Computer Science at KU Leuven.		19 & 20 Jan	https://ai.kuleuven.be/members/00054729