S. M. Ali Eslami

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Education

University of Edinburgh, School of Informatics, Edinburgh, UK

Sept 09 - Dec 13

PhD, Machine Learning and Computer Vision
- Supervisor: Prof. Christopher K. I. Williams
- Thesis: *Hierarchical Probabilistic Models for Image Segmentation*

Sept 05 - June 09

BEng, Artificial Intelligence and Software Engineering
- First class honours (80% average)
- Supervisor: Dr. Subramanian Ramamoorthy
- Dissertation: *Evolving Robust Control Strategies for Simulated Animats*
- Awards: Class medal, Jim Howe prize, Citigroup prize

University of Oxford, Department of Engineering Science, Oxford, UK

July 12 - Feb 13

Visiting student, Visual Geometry Group
- Host: Prof. Andrew Zisserman

James Gillespie's High School, Edinburgh, UK

Sept 04 - June 05

A-levels and Advanced Highers
- Subjects: Physics, Mathematics, Computing (all grade A)

Ehsan High School, Tehran, Iran

Sept 99 - June 04

Diploma
- Major: Mathematics and Physics (97% average)
- Ranked 4th in exam with more than 700 participants from Iran's top schools

Experience

Feb 15 - Present

Google DeepMind, London, UK
Research Scientist

Jan 14 - Oct 14

Microsoft Research, Cambridge, UK
Postdoctoral researcher

Developed efficient inference algorithms for probabilistic programming languages. Previously worked on probabilistic models of images. Also collaborated with the medical imaging and Kinect teams on applications of our models.

Feb 09 - Dec 13

DigitalBottles, **BookAdopter**, **KeepMeOut**
digitalbottles.com, bookadopter.com, keepmeout.com
Co-founder, Developer and Designer

Led teams of up to six people to develop the concepts and was heavily involved in publicity efforts. The websites have attracted millions of visitors from over 190 countries and have been featured in several magazines and newspapers.

June 11 - Aug 11   **Microsoft Research**, Cambridge, UK
Research Intern

Worked with Dr. John Winn and Dr. Nicolas Heess in the Machine Learning and Perception group on novel probabilistic models of object shape. I also collaborated with the medical imaging and Kinect teams on applications of our models.

July 07 - Feb 08   **Rare Ltd.**, Birmingham, UK
Software Engineer

Worked within the Shared Technology Group (STG) on a number of tools and APIs used internally by the game teams and STG itself:

- Designed and implemented a C# library to compile proprietary XML formatted data structures to (and decompile such data from) C++ memory streams, with support for list-types and pointer variables.

Worked directly with Senior Graphics Engineer on research and development:

- Designed and implemented a novel compression-based high dynamic range (HDR) lighting solution for Xbox 360 videogame Viva Piñata 2. The work involved writing new shaders, updating existing ones, significantly altering the rendering pipeline and also working closely with artists to adjust the system's behaviour and to create appropriate tools.

May 05 - June 06   **Studio Masis and Dorsia**, Edinburgh, UK
Web Developer

Designed and developed multiple standards compliant websites with PHP backends. Managed projects to completion and handled talks with clients.

May 03 - Sept 03   **Comserve Iran**, Tehran, Iran
Technical Intern

Maintained a large stock-photo database, serviced client computers and helped with the deployment of LAN networks in medium-sized businesses.

Publications

Dec 15   Theophane Weber, Nicolas Heess, S. M. Ali Eslami, John Schulman, David Wingate and David Silver. *Reinforced Variational Inference.* Neural Information Processing Systems (NIPS) 2015, Workshop on Advances in Approximate Bayesian Inference. Montréal, Canada.

July 15   Wittawat Jitkrittum, Arthur Gretton, Nicolas Heess, S. M. Ali Eslami, Balaji Lakshminarayanan, Dino Sejdinovic and Zoltán Szabó. *Kernel-Based Just-In-Time Learning for Passing Expectation Propagation Messages.* Uncertainty in Artificial Intelligence (UAI). Amsterdam, The Netherlands.

July 15   Wittawat Jitkrittum, Arthur Gretton, Nicolas Heess, S. M. Ali Eslami, Balaji Lak-

	shminarayanan, Dino Sejdinovic and Zoltán Szabó. *Just-In-Time Kernel Regression for Expectation Propagation.* International Conference on Machine Learning (ICML) 2015, Workshop on Large Scale Kernel Learning. Lille, France.
May 15	Varun Jampani*, S. M. Ali Eslami*, Daniel Tarlow, Pushmeet Kohli and John Winn. *Consensus Message Passing for Layered Graphical Models.* International Conference on Artificial Intelligence and Statistics (AISTATS) 2015. San Diego, California, USA.
Dec 14	S. M. Ali Eslami, Daniel Tarlow, Pushmeet Kohli and John Winn. *Just-In-Time Learning for Fast and Flexible Inference.* Neural Information Processing Systems (NIPS) 2014. Montreal, Quebec, Canada.
Oct 13	Mark Everingham, S. M. Ali Eslami, Luc Van Gool, Christopher K. I. Williams, John Winn and Andrew Zisserman. *The PASCAL Visual Object Classes Challenge – a Retrospective.* International Journal of Computer Vision (IJCV). *In press.*
Jan 13	S. M. Ali Eslami, Nicolas Heess, Christopher K. I. Williams and John Winn. *The Shape Boltzmann Machine: a Strong Model of Object Shape.* International Journal of Computer Vision (IJCV). **CVPR special issue**.
Dec 12	S. M. Ali Eslami, and Christopher K. I. Williams. *A Generative Model for Parts-based Object Segmentation.* Neural Information Processing Systems (NIPS) 2012. Lake Tahoe, California, USA.
June 12	S. M. Ali Eslami, Nicolas Heess and John Winn. *The Shape Boltzmann Machine: a Strong Model of Object Shape.* Computer Vision and Pattern Recognition (CVPR) 2012. Providence, Rhode Island, USA. **Oral presentation**.
Sept 11	S. M. Ali Eslami and Christopher K. I. Williams. *Factored Shapes and Appearances for Parts-based Object Understanding.* British Machine Vision Conference (BMVC) 2011. Dundee, UK. **Oral presentation**.
June 09	S. M. Ali Eslami and Subramanian Ramamoorthy. *Evolving Robust Control Strategies for Simulated Animats.* Undergraduate Dissertation, University of Edinburgh. Edinburgh, UK.

Teaching

Autumn 09 - Autumn 12	**Probabilistic Modelling and Reasoning**, University of Edinburgh Teaching Assistant and Tutor
Spring 10	**Machine Learning and Pattern Recognition**, University of Edinburgh Tutor
Autumn 09	**Computer Systems and Software Engineering**, University of Edinburgh Tutor
Spring 07 Spring 10	**Object Oriented Programming**, University of Edinburgh

Tutor and Lab Demonstrator

Autumn 06	**Functional Programming**, University of Edinburgh
Autumn 09	Tutor and Lab Demonstrator
May 04 -	**HTML and CSS**, Edinburgh, UK
Sept 04	Private Tutor

Awards

Feb 11	EDTC Feasibility Study Grant with Vidiowiki Ltd.
Sept 09 - Aug 13	Carnegie Trust Scholarship
Sept 09 - Aug 13	Overseas Research Scholarship
Sept 09	School of Informatics scholarship for PhD study
June 09	Jim Howe prize for highest overall mark in AI
June 09	School of Informatics medal for highest overall mark in class
June 07	IBM University Team Challenge – 4th place
Jan 07	IBM UK Mainframe Contest – 2nd place
Sept 05	British Computer Society Undergraduate Bursary
June 04	University of Tehran award for outstanding high school students

Selected Talks

December 14	**Artificial Intelligence and Computer Aided Design** Sharif University of Technology, Kish, Iran
December 14	**Extensions to Message Passing Inference** Sharif University of Technology, Kish, Iran
December 14	**Artificial Intelligence and Computer Aided Design** Faculty of Fine Arts, University of Tehran, Tehran, Iran
September 14	**Extensions to Message Passing Inference** Microsoft Research, Cambridge, UK
March 13	**Boltzmann Machines and their Extensions** Heriot-Watt University, Edinburgh, UK
January 13	**Generative Models of Images of Objects** Sharif University of Technology, Tehran, Iran
December 12	**Generative Models of Images of Objects** Redwood Institute at the University of California at Berkeley, USA

December 12	**Generative Models of Images of Objects**
	Bosch Research and Technology North America, Palo Alto, USA

June 12	**The Shape Boltzmann Machine: a Strong Model of Object Shape**
	Computer Vision and Pattern Recognition (CVPR), Providence, USA

June 12	**Generative Models of Images of Objects**
	Toyota Technological Institute, University of Chicago, Chicago, USA

June 12	**Generative Models of Images of Objects**
	New York University, New York, USA

Mar 12	**The Shape Boltzmann Machine: a Strong Model of Object Shape**
	Rank Prize Funds, Symposium on Machine Learning and Computer Vision, Windermere, UK

Sept 11	**Factored Shapes and Appearances for Parts-based Object Modelling**
	ACM Seminar, University of Tehran, Tehran, Iran

Oct 11	**Factored Shapes and Appearances for Parts-based Object Modelling**
	British Machine Vision Conference, Dundee, UK

Oct 10	**Hierarchical Probabilistic Models for Image Understanding**
	CIfAR Summer School on Learning and Vision, Toronto, Canada

Jan 10	**KeepMeOut of Quetzi**
	Student TechMeetup, Edinburgh, UK

Apr 09	**High Dynamic Range Lighting on the Xbox 360**
	TechMeetup, Edinburgh, UK

Languages

PERSIAN	Native
ENGLISH	Fluent
ARABIC	Conversational

Technical Experience

LANGUAGES	MATLAB, C#, C++, Java, Python, Ruby, Haskell
WEB	Django, Rails, PHP, HTML and CSS, Javascript
APIS	DirectX, OpenGL, PhysX

Responsibilities

REPRESENTATION

Nov 12 - Feb 13	**Member**
	TEDx University of Edinburgh Organising Committee

Nov 09 - Dec 12	**Elected student representative**
	Science and Engineering Research Training Committee

Dec 09 - Dec 12	**Student representative**

PhD Experience Task Group

Sept 09 - Dec 12	**Elected postgraduate student representative** Edinburgh University Students' Association
Sept 08 - June 09	**Committee member (PR officer)** Edinburgh University Computer Society

ORGANISATION

Jan 14 - Present	**MSR Cambridge Machine Learning Cookie Talks**
Sept 09 - Dec 13	**Edinburgh Probabilistic Inference Group Journal Club**

ANNOTATION

PASCAL Visual Object Classes Challenge (VOC), 2010, 2011

REVIEWING

Scottish Informatics and Computer Science Alliance (SICSA), 2010
European Conference on Computer Vision (ECCV), 2013, 2014
Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2014

References

Prof. Christopher K. I. Williams
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Prof. Andrew Zisserman
Department of Engineering Science
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