

Henry Senior

COMPUTER VISION PHD STUDENT

🏠 www.henrysenior.com 📧 Delphboy 📺 Delphboy

Education

Queen Mary University London

London, UK

PHD IN COMPUTER SCIENCE

Sept. 2021 - Current

Researching how Deep Learning can be applied to scene understanding tasks in Computer Vision. Specifically, I am focusing on how Graph Neural Networks can be used to represent a scene in a way that enables computers to better understand its contextual and semantic meaning. This work has a number of high impact applications: from image captioning, visual question answering, and image retrieval.

University of Liverpool

Liverpool, UK

MSC IN ADVANCED COMPUTER SCIENCE

Oct. 2020 - Sept. 2021

- Distinction (Average 81%)
- Dissertation title: "Detecting Objects in 3D Using Graph Neural Networks" (83%). The project focused on the design of a novel 3D object detector fusing 2D and 3D scene data from the KITTI data set
- 87.40% in Research Methods module writing a SLAM literature review in a group of varied academic backgrounds
- Investigating the use of Machine Learning to detect biofuel sources in images as part of the MSc Group Project module
- Studied a range of AI, Machine Learning, Deep Learning, and Reinforcement Learning modules in the second semester

University of Salford

Salford, UK

BSC (HONS) IN COMPUTER SCIENCE WITH PROFESSIONAL EXPERIENCE

Sept. 2016 - July. 2020

- First Class Honours (85.85% average)
- Dissertation title: "Automated contextual caption generation for social media platforms"
- Used my dissertation to specialise in computer vision and scene understanding
- Proficient in; Java, C#, C/C++, Python, Linux. Experience of; PHP, HTML, CSS, JavaScript, SQL

Industry Experience

CarFinance247

Manchester, UK

SOFTWARE ENGINEER

Aug. 2018 - Sept. 2021

- Asked to continue part-time throughout my undergraduate final year and masters after a successful industrial placement
- Developed mission critical software following Agile principles
- Experience of modern C# development with .NET Core as well as legacy systems
- Helped to complete a image pipeline project set to save the company over £40,000 per year

Teaching Experience

Queen Mary University of London

London, UK

ASSISTANT EXAMINER

Jan 2022 - Present

- Marked multiple modules
- Successfully marked extensive number of papers within a tight time frame
- Co-ordinated with other examiners to ensure a smooth operation

University of Salford

Salford, UK

UNDERGRADUATE TEACHING ASSISTANT

Sept. 2019 - April 2020

- Assisted in laboratory teaching of Programming, Web Development, Human Computer Interaction, and Database modules
- Provide teaching to a mixed group of first year students

Selected Projects

More Available on my GitHub Profile

[GITHUB.COM/DELPHBOY](https://github.com/Delphboy)

Detecting Objects in 3D Using Graph Neural Networks

University of Liverpool

DEVELOPER

June 2021 - Sept. 2021

- Built on the Frustum PointNet work of Qi *et al.* and the PointGNN work of Shi and Rajkumar
- Proposed a novel GNN based 3D object detector that fused monocular RGB images with LiDAR data to reduce the search space

Carfinance.Vehicles.Images

CarFinance247

DEVELOPER

Sept. 2020 - Jan. 2021

- Greenfield project developed alongside two senior engineers
- Modernised a large portion of legacy code using the Microsoft Azure Cloud
- Set to save the company over £40,000 per year

Automated Contextual Image Caption Generation for Social Media Platforms

University of Salford

AUTHOR

Sept. 2019 - May. 2020

- Final year dissertation. Achieved 82%
- Developed an understanding of the state of the art in image captioning systems
- Identified how current systems can be improved upon
- Creating a system to create captions with more contextual and semantic information

Funding

Total funding secured

£338.08

Queen Mary University London

£338.08

QMUL FESTIVAL OF COMMUNITIES 2022

June 2022

Secured funding to run a workshop at the University's annual community outreach event demonstrating basic computer vision filters.

Honours & Awards

2018 **University of Salford**, Award for Outstanding Academic Achievement

Salford, UK

2017 **University of Salford**, Award for Outstanding Academic Achievement

Salford, UK

2016 **Canon Slade**, The Trustee's Prize for Computing

Bolton, UK

Society Committees

University of Salford Computing Society

Salford, UK

PRESIDENT

Nov 2016 - May 2018

- Organised regular meetings covering a wide range of topics
- Provided a framework for mentoring first year students
- Arranged for departmental lecturers to give guest lectures about their research
- Worked with the British Computing Society, enabling us to become a recognised Student Chapter