

## Education

- PhD Engineering**, University of Cambridge (UK) 2014 - 2018  
 Thesis title: The role of planning in motor learning  
 Coursework: Computational Neuroscience, Machine Learning
- AI Summer School**, Microsoft Research (UK) 2018
- Bachelor of Engineering (Hons)**, University of Auckland (NZ) 2010 - 2014  
 Specialisation: Mechatronics Engineering  
 Graduated top in class: GPA 8.78/9.0  
 Deans Honours List (top 5% each year - 2010/'11/'12/'13)

## Research Experience

- Postdoctoral Research Associate**, University of Oxford (UK) 2018 - 2020  
 Research Associate of Wadham College  
 Group: Human Information Processing Lab, Experimental Psychology  
 Research: Structure learning in humans and neural networks  
 PI: Prof. Christopher Summerfield
- PhD Research**, University of Cambridge (UK) 2014 - 2018  
 Group: CBL, Information Engineering  
 Research: Human motor learning of novel dynamics  
 Supervisor: Prof. Daniel Wolpert
- Undergraduate Research**, University of Auckland (NZ) 2013  
 Design and build of a stroke rehabilitation robot
- Research Assistant**, University of Auckland (NZ) 2012  
 3D human motion recording and kinematics analysis

## Journal Publications

- [1] **Sheahan, H.\***, Luyckx, F.\*, Nelli, S., Teupe, C., & Summerfield C. 2020. Neural state space alignment for magnitude generalization in humans and recurrent networks. *bioRxiv*. 2020.07.22.215541
- [2] Summerfield, C., Luyckx, F., & **Sheahan, HR.** 2020. Structure learning and the posterior parietal cortex. *Progress in Neurobiology*. 184
- [3] Albert, S., Jang, J., **Sheahan, HR.**, Teunissen, L., Vandevorode, K., & Shadmehr, R. 2019. An implicit memory of errors limits human sensorimotor adaptation. *bioRxiv*. 868406
- [4] Sadeghi, M., **Sheahan, HR.**, Ingram, JN., & Wolpert, DM. 2019. The visual geometry of a tool modulates generalization during adaptation. *Scientific Reports*. 9, (2731)
- [5] **Sheahan, HR.**, Ingram, JN., Zalalyte, GM. & Wolpert, DM. 2018. Imagery of movements immediately following performance allows learning of motor skills that interfere. *Scientific Reports*. 8 (14330)
- [6] **Sheahan, HR.**, Franklin, DW. & Wolpert, DM. 2016. Motor Planning, Not Execution, Separates Motor Memories. *Neuron*. 92 (4), 773-779
- [7] Milsom, SA., Sweeting, JA., **Sheahan HR.**, Haemmerle, E. & Windsor, JA. 2015. Naso-enteric tube placement: a review of methods to confirm tip location, global applicability and requirements. *World Journal of Surgery*. 39 (9), 2243-2252
- [8] **Sheahan HR.**, & Maxwell, E. 2013. ReachHab: a bilateral upper limb rehabilitation device for stroke. *UoA Mechatronics Research Journal*. 6, 8-15

## Industry Experience

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|-------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Mechanical Engineer</b> , Beca (NZ)<br>Engineering consulting                                                        | 2014    |
| <b>Research &amp; Design Engineer (intern)</b> , Adept Ltd. (NZ)<br>Design of shop floor robots and industrial research | 2012-13 |

## Awards and Funding

|                                                                                                                                                                            |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Non-Stipendiary Research Associate, Wadham College, University of Oxford<br>£2,200 over 2 years                                                                            | 2018 |
| Benefactor's Scholarship, St John's College, University of Cambridge<br>£1,300                                                                                             | 2014 |
| Cambridge-Rutherford Memorial Scholarship, Royal Society of New Zealand<br>3 yr full funding postgraduate award worth £115,000<br>3 awarded nationally/year in New Zealand | 2013 |
| Fulbright Scholarship<br>postgraduate research award worth US\$26,000 (offer declined)                                                                                     | 2013 |
| Beca & Rotary Club of Auckland Scholarship, University of Auckland<br>awarded to the most outstanding all-round final year engineering student, NZ\$5,000                  | 2013 |
| Rotary Youth Leadership Award                                                                                                                                              | 2013 |
| Auckland University Engineering Association Scholarship, University of Auckland<br>NZ\$2,500                                                                               | 2012 |
| Summer Student Research Scholarship, University of Auckland<br>NZ\$5,000                                                                                                   | 2011 |
| Beca Part II Engineering Scholarship, University of Auckland<br>NZ\$2,500                                                                                                  | 2011 |

## Teaching

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|----------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Supervisor</b> , Experimental Psychology Department, University of Oxford<br>Part I, Cognitive Neuroscience                   | 2019    |
| <b>TA/Tutor</b> , Summer School for Advanced Modeling of Behaviour, Institut d'Estudis Catalans                                  | 2019    |
| <b>Supervisor</b> , Engineering Department, University of Cambridge<br>Engineering Tripos, IIA; 3G3 Introduction to Neuroscience | 2018    |
| <b>Demonstrator</b> , Engineering Department, University of Cambridge<br>Engineering Tripos, IIA; 3F2 Systems & Control          | 2017    |
| <b>TA/Tutor</b> , Engineering Department, University of Auckland<br>All courses in Bachelor of Engineering, Part I               | 2011-12 |

## Languages

|                                         |                                                                                 |
|-----------------------------------------|---------------------------------------------------------------------------------|
| Python, C#, C++, Unity, MATLAB, PyTorch | <a href="https://github.com/hannahsheahan">https://github.com/hannahsheahan</a> |
|-----------------------------------------|---------------------------------------------------------------------------------|

## Other Interests

|                                                                      |         |
|----------------------------------------------------------------------|---------|
| Athena SWAN Committee, Cambridge University Engineering Department   | 2018    |
| Cambridge University Association Football Club (Women's Eagles)      | 2014-16 |
| Women's Welfare Officer, St John's College SBR, Cambridge University | 2014-16 |
| Part II, III, IV Class Representative, University of Auckland        | 2011-13 |

## Referees

Prof. Chris Summerfield (Postdoc supervisor)  
University of Oxford, UK  
christopher.summerfield@psy.ox.ac.uk

Prof. Daniel Wolpert (PhD supervisor)  
Columbia University, USA  
wolpert@columbia.edu

Dr. Andrew Saxe (collaborator)  
University of Oxford, UK  
andrew.saxe@psy.ox.ac.uk