Jenny Vuong

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Education

PhD | Psychology (3D Perception)
University of Reading | 2011-2015

- Research: Investigating scene representation in human observers using a spatial updating task
- Supervisor: Prof. Dr. Andrew Glennerster
- External supervisor: Dr. Andrew W. Fitzgibbon

M.Sc | Biomedical Engineering
Vienna University of Technology | 2008-2011

- Research: Bone Fibrillogenesis and Mineralization: Quantitative Analysis and Implications for Tissue Elasticity
- Supervisor: Prof. Dr. Christian Hellmich
- Graduation with distinction

B.Sc | Computer Science
Vienna University of Technology | 2004-2008

- Research: Problem oriented documentation in medicine – implementation of different approaches with the standard HL7-CDA
- Supervisor: Prof. Dr. Georg Duftschmid

Skills

Languages
Chinese-Cantonese (Mother Tongue)
German (Native)
English (Fluent)
Chinese-Mandarin (Basic)

Programming and Data Analysis
JavaScript (D3, Angular), Node and Express, HTML, CSS, R, MATLAB, C/C++

General
Operating systems (macOS X, Unix, Windows), database (mySQL, mongoDB), LaTeX, image processing (Adobe Illustrator, GIMP)

Experience

UNSW Art & Design, EPICentre, Sydney, Australia | Senior Research Fellow
11/2018 - 06/2019

- Project *SR2: Simulation for Future Operating Concept Development with Australian Department of Defence:* Visual analytics and design of narrative storytelling module for agent-based simulation data
- Project *Depression and Anxiety – Holistic approach using technology:* Review of current knowledge state of investigated triggers for depression, review of mental health apps and conceptualising the usage of immersive virtual reality for storytelling

CSIRO Data61 and Garvan Institute of Medical Research, BioData Visualisation Group, Sydney Australia | Postdoctoral Fellow
11/2015 - 11/2018

- Project *Minardo*: Developing visualisation methods, visual analytics and web-based tool for phosphoproteomic datasets
- Project *Versus*: Design of web-based visual analytics tool and user studies to test uncertainty in protein sequence-to-structure alignment
- Project *Dexterity*: Design and implementation of web-based tool for 3D structure control using a mobile device

University of Reading, Virtual Reality Research Group, UK | Research Assistant
10/2014 - 05/2015

- Project *A conversation about the brain:* Implementation of simulations in MATLAB to visualize how the brain might represent a stable representation of the world.

Vienna University of Technology, Biomechanics Research Group, Austria | Research Assistant
06/2010 - 10/2011

- Project *BIO-CT-EXPLOT*: Developing and programming a plugin in C++ for the software Skyscan CT-analyser to translate computer tomography data of bones into voxels-specific micromechanics-based elasticity.

Wolf Theiss Attorney-at-Law, Austria | First-level IT user support assistant
10/2008 - 06/2010

- User support, maintenance, update of intranet website (ASP, HTML)

Red Cross, Austria | Volunteer
12/2009 - 10/2010

- Support of the nurses and physicians at Saint Anna Children's Hospital, Vienna.

Reichel und Reichel Psychotherapists | Assistant
03/2001 - 9/2004

- Designing and drafting workshop/seminar leaflets, assistant accounting, transcription of books and articles

Interests

Professional

- Data visualisation, visual analytics, data analysis
- Virtual/augmented reality, smart devices
- Psychology (human perception)
- Project management, outreach and education
- Web programming (JavaScript)

Personal

- Sports: Indoor rock climbing, bouldering, hiking
- Art: Crocheting, photography (participant of 7th Photomarathon in Vienna, Austria, 49th place out of 1.684 participants)
- Reading: Haruki Murakami, Kazuo Ishiguro, George R.R. Martin, John R.R. Tolkien, and others – Science fiction, fantasy, thriller

Papers

Published/Accepted

- **Vuong, J.**, Fitzgibbon, A., & Glennerster, A. (2019). No single, stable 3D representation can explain pointing biases in a spatial updating task. Scientific Reports, 9:12578, 1-13.
- Kaur, S., Baldi, B., **Vuong, J.**, & O'Donoghue, S. I. (2019). A benchmark dataset for analyzing and visualizing the dynamic epiproteome. Data in Brief, 104000.
- Kaur, S., Baldi, B., **Vuong, J.**, & O'Donoghue, S. I. (2019). Visualization and Analysis of Epiproteome Dynamics. Journal of molecular biology.
- **Vuong, J.**, Kaur, S., Heinrich, J., Ho, B. K., Hammang, C. J., Baldi, B. F., & O'Donoghue, S. I. (2018). Versus—A tool for evaluating visualizations and image quality using a 2AFC methodology. Visual Informatics, 2(4), 225-234.
- O'Donoghue, S. I., Baldi, B. F., Clark, S. J., Darling, A. E., Hogan, J. M., Kaur, S., Maier-Hein, L., McCarthy, D. J., Moore, W.J., Stenau, E., Swedlow, J.R., **Vuong, J.**, Swedlow, J. R., Procter, J.B. (2018). Visualization of biomedical data. Annual Review of Biomedical Data Science, 1, 275-304.
- Burgess, A.*, **Vuong, J.***, Rogers, S., Malumbres, M., & O'Donoghue, S. I. (2017). SnapShot: phosphoregulation of mitosis. Cell, 169(7), 1358-1358. *Joint first authorship.
- Netzel, R., **Vuong, J.**, Engelke, U., O'Donoghue, S., Weiskopf, D., & Heinrich, J. (2017). Comparative eye-tracking evaluation of scatterplots and parallel coordinates. Visual Informatics, 1(2), 118-131.
- **Vuong, J.**, Stolte, C., Kaur, S., & O'Donoghue, S. (2016, November). Developing a Visual Analytics Tool for Large-Scale Proteomics Time-Series Data. In 2016 Big Data Visual Analytics (BDVA) (pp. 1-2). IEEE.
- Heinrich, J., **Vuong, J.**, Hammang, C. J., Wu, A., Rittenbruch, M., Hogan, J., ... & O'Donoghue, S. I. (2016, June). Evaluating viewpoint entropy for ribbon representation of protein structure. In Computer Graphics Forum (Vol. 35, No. 3, pp. 181-190).
- Engelke, U., **Vuong, J.**, & Heinrich, J. (2016). Visual performance in multidimensional data characterisation with scatterplots and parallel coordinates. Electronic Imaging, 2016(16), 1-6.
- **Vuong, J.**, & Hellmich, C. (2011). Bone fibrillogenesis and mineralization: quantitative analysis and implications for tissue elasticity. Journal of theoretical biology, 287, 115-130.

Talks

- ISMB 2017, Prague, Czech: Birds of a Feather – Future of phosphoproteomics
- OzViz 2016, Queensland, Australia: How Napoleon marched into phosphoproteomic data.
- BDVA 2016, Sydney, Australia: Developing a Visual Analytics Tool for Largescale Proteomics Timeseries Data (Talk and conference paper)
- VIDI Lab 2016 – Kwan-Liu Ma, UC Davis, Davis, US: Minardo - A novel layout to visualize phosphoproteomic time-series data
- VDA Lab 2016, University of Vienna, Vienna, Austria: Visualizing Biological Data - Developing web-based applications and the role of human perception
- The Scotthish Vision Group Meeting 2013, Glencoe, Scotland, UK: The effect of walking and teleportation on spatial updating in virtual and real scenes
- Microsoft Research 2012, Cambridge, UK: How do humans point to unseen objects?
- EMI 2011, Boston, US: The Osteoid-Bone Transformation: Implications for Tissue Elasticity. Runner-Up at the Y.C. Fung Student Paper Competition.
- FIT 2011 – "Frauen in die Technik": Women in Technology. Representative female engineer of Institute for Mechanics of Materials and Structure

Posters

- VIZBI 2018, Cambridge, US; Minardo: There and Back Again.
- 3DSig - ISMB 2017, Cambridge, US; Dexterity: A framework to use a smartphone as a 3D wand.
- Cell Symposia 2016, Berkeley, US; Visualizing spatiotemporal data on cell signalling pathways.
- VIZBI 2016, Heidelberg, Germany; Using Aesthetics to Visualize Uncertainty: A Crowdsourcing Study.
- CSIRO CSS and eResearch 2016, Melbourne, Australia; Using Aesthetics to Visualize Uncertainty: A Crowdsourcing Study.
- VSS 2014 - Vision Sciences Society, Tampa, Florida, US; Large systematic biases in pointing to real and virtual unseen targets.
- ECVP 2013, Bremen, Germany; Updating visual direction in real and virtual scenes.
- PhD Conference 2013, University of Reading, Reading, UK; The effect of walking and teleportation on spatial updating in virtual and real scenes. (Finalist at the Research Poster Competition.)

Patent

- **Vuong, J.** & O'Donoghue, S.I. Systems, methods and devices for controlling a view of a 3D object on a display. Patent Application PCT/AU2018/050200. Mar. 20, 2018.

Grants and Research Funding

- 03/2018: Recipient of EMCR Science Pathways CSIRO Sponsorship Competition
- 12/2016: Recipient of CSIRO eResearch Grant for project: Refactoring of the Minardo Insulin Snapshot codebase from an Apache architecture to a Node.js architecture in collaboration with IM&T engineers at CSIRO
- 2011-2014: Microsoft PhD Scholarship, University of Reading, UK
- 09/2007-07/2008: Scholarship of the Chinese Embassy, Vienna, Austria
- 02/2007: Performance Scholarship for extraordinary achievements awarded by the Department of Legal Affairs, University of Vienna, Austria

Conference Organisation

- 05/2019: **Visualisation Matters**, Canberra, Australia; Responsibilities: Co-organiser, updating of website, program coordination and invitation of speakers
- 01/2016-06/2016: **VizbiPlus "Visualising the Future of Biomedicine"**, Sydney, Australia; Co-organizer in collaboration with Vivid Event, Sydney, Australia; Responsibilities: Website design and development, support in project management
- 01/2016-06/2016: **DataVis Masterclass "Principles, Tools and Storytelling"**, Sydney, Australia; Co-organizer in collaboration with Vivid Event, Sydney, Australia; Responsibilities: Website design and development, support in project management
- 09/2013-12/2014: **Perception&Action Meetings**, School of Psychology and Clinical Language Science, University of Reading, UK; Responsibilities: Chair and organiser of the bi-weekly meetings.