

Creative Technologist | Interactive Experience Designer | Digital Artist

## Professional Summary

Creative technologist specializing in the design and implementation of real-time interactive systems. Expert in developing sensor-based interfaces and complex audio-visual installations that seamlessly blend physical and digital interactions. Proven track record of delivering innovative technical solutions for performance environments, public installations, and interactive experiences. Strong background in system architecture, machine learning implementation, and real-time data processing, combined with deep understanding of artistic practice and user experience design.

## Technical Skills

- Interactive Systems:** Real-time sensor integration, OSC protocols, Custom interface design, Physical computing, Embedded systems
- Creative Development:** Processing, p5.js, MaxMSP/Max for Live, Arduino, IMU sensors, Wekinator
- Machine Learning & AI:** Gesture recognition, Perceptron systems, ML.Markov, Real-time data analysis and mapping
- Audio/Visual Production:** Ableton Live, Max for Live, Real-time processing, L-Systems, Particle systems
- Programming:** JavaScript, Python, Java, Real-time data processing, System integration
- Languages:** English (advanced), Russian (native), Spanish (learning)

## Featured Interactive Experiences

- Artificial Symbiosis**

INTERACTIVE SYSTEMS DESIGNER

UTS Hacking Visual Culture Festival

2024

  - Architected complex interactive system integrating wireless sensor interface, real-time processing, and AI-driven visuals
  - Developed custom visual generation system using L-Systems and perceptron-based AI, mapped to real-time performance data
  - Implemented multi-layer communication system using OSC protocol to manage data flow between Max/MSP, Processing, and Wekinator
  - Successfully deployed and adapted system across multiple venues including MAP MIMA and UTS Festival
- Harmony in Hive**

INTERACTIVE EXPERIENCE DESIGNER

Georges River Council's Uncontained Festival

2024

  - Led visual and interaction design, developing custom system using IMU controllers for intuitive user interaction
  - Implemented real-time data processing pipeline for sensor integration with visual and audio elements
  - Created responsive visual system that dynamically adapts to user interaction and environmental data
  - Collaborated with Richard Savery on robotics integration while managing overall system architecture

- Designed and implemented distributed system architecture for real-time human-robot performance
- Developed wireless communication protocols between sensor interface and robotic control systems
- Created custom mapping strategies for synchronizing human performance with robotic percussion
- Built interactive visual system responding to both human and robotic performers

Education

PhD in Creative Technology, Faculty of Engineering and IT

UNIVERSITY OF TECHNOLOGY, SYDNEY

2022 - Present

- Research Focus: Interactive System Design, Real-time Performance Systems, and Human-Computer Interaction
- Developing novel approaches to sensor-based interfaces and real-time audiovisual processing
- Awarded the UTS Research Excellence Scholarship (\$40,000 per annum)

M.F.A Integrated Composition, Improvisation and Technology

UNIVERSITY OF CALIFORNIA, IRVINE

2014 - 2016

- Focus: Interactive systems design, digital audio processing, and multimedia integration
- Thesis: Intermedia Storytelling - exploring real-time interaction between performance and technology
- GPA: 3.968/4.0 - Fully funded with Graduate Research/Teaching Assistantship

Diploma of Music (Jazz Performance)

SYDNEY CONSERVATORIUM OF MUSIC, UNIVERSITY OF SYDNEY

2008 - 2010

- Focused on improvisation and real-time musical interaction
- Distinction average (75.68)

B.Mus (Classical Performance) with Distinction

AUSTRALIAN INSTITUTE OF MUSIC, SYDNEY

2004 - 2006

- Combined traditional performance practice with emerging technologies
- Scholarship recipient with focus on innovative performance techniques

Selected Publications

Gesture and Narrative: Blending Human Performance with Visual Storytelling

Utrecht

NEW INTERFACES FOR MUSICAL EXPRESSION (NIME)

2024

- Research on real-time interaction systems and visual narrative generation

Collaboration Between Robots, Interfaces and Humans: A Practice-based and Audience Perspective

Seoul

INTERNATIONAL COMPUTER MUSIC CONFERENCE (ICMC)

2024

- Investigation of human-robot interaction in creative performance contexts

Enhancing Violin Performance through Real-Time Interaction: Design and Evaluation of a Wireless Audio-Visual Interface

Sydney

AUSTRALASIAN COMPUTER MUSIC CONFERENCE (ACMC)

2023

- Technical implementation of wireless sensor interface for real-time performance control

Grants and Awards

## HDR WiEIT Award for Excellence in Research

UTS 2024

- Awarded AUD\$500 for distinction in Higher Degree Research

## Best Emerging Paper Award

AUSTRALASIAN COMPUTER MUSIC CONFERENCE 2023

- Recognition for innovative research in interactive music systems

## HDR WiEIT Award

UTS 2023

- Awarded distinction for excellence in Higher Degree Research

## Vice-Chancellor's Postgraduate Research Fund

UNIVERSITY OF TECHNOLOGY SYDNEY 2022

- AUD\$2,478 awarded for international conference presentation

## HDR WiEIT Award

UTS 2022

- AUD\$2,500 Equity award for research excellence

## Professional Development Grant

AUSTRALIA COUNCIL FOR THE ARTS 2013

- AUD\$10,000 competitive grant for career development in innovative artistic practice
- Funded advanced studies in improvisation and composition at UC Berkeley and UCLA

## Referees

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### Prof Andrew Johnston (PhD supervisor)

Andrew.Johnston@uts.edu.au

UNIVERSITY OF TECHNOLOGY SYDNEY

- Head Of Discipline (Interaction Design) School of Computer Science

### A/Prof Sam Ferguson (Associate supervisor)

Samuel.Ferguson@uts.edu.au

UNIVERSITY OF TECHNOLOGY SYDNEY

- Associate Professor Associate Dean (Teaching and Learning)

### Wade Marynowsky

Wade.Marynowsky@uts.edu.au

UNIVERSITY OF TECHNOLOGY SYDNEY

- Lecturer: School of Computer Science. Course coordinator FID and PPI