

Quantitative analytic solutions. Efficient innovation. Human focused design.

Technical Skills Matlab, Labview, C++. Research innovation at production quality.
Creating and testing data acquisition systems, SVN, UML.
Real-time EEG processing, Biofeedback, designing experimental testing procedures and software, organising trials, deterministic machine learning.
Web Technologies: PHP5, Perl, SQL, HTML, CSS
Automation and solution integration. Efficient algorithms.

Career Summary ***Emotiv (June 2006 to November 2008) – Research Engineer***

Research Engineer at Emotiv, working on a novel human/machine interface based on a consumer optimized EEG headset: www.emotiv.com

- Developed Labview user interface interfacing with the Emotiv SDK
- Developed universal classifiers and machine learning algorithms to run on a real-time system. Deep understanding of PCA, ICA, Gaussian Mixture Models, and optimizing feature sets for real-time classification systems.
- Developed the Non Transient Expressiv Algorithm which is the core machine learning algorithm behind the Expressiv Suite, doubling the number of detectable expressions. This is a reliable and robust algorithm and is always demonstrated to clients.
- Implemented quantitative analysis suite which integrates with both the SDK and Matlab infrastructure.
- Collaborated with SDK team to create an SDK specifically designed for researchers' needs. Ported Matlab algorithms to C++.

Tenix (2005 – 2006)- Software Engineer – Sydney, Australia

- Coding, version control, system design and requirements documentation to MILSPEC 498 regulation, unit testing and peer review.
- The Land 19 Dome simulator project. The virtual reality dome consisted of 27 projectors creating a 3D environment for the military to train to use missile launchers. Implemented the ASE (Army Synthetic Environment) interface which allowed external simulations to interact with the Land 19 Dome. This project won the Australian Engineering Excellence Awards 2006.
- Implemented a Naval Frigate training simulator using the RAPID visual programming tool to create high fidelity working models of machines onboard. Site liaison in Naval Frigate machine rooms to gain accurate models of onboard systems.
- Created new entities within the network warfare simulation JSAF (Joint Semi-Automated Forces). C++, outfitting entities for Australia's predicted future forces.
- Liaised extensively with external clients to determine requirements and specifications.

DSTO-Defense Science and Technology Organization - EWRD – Electro-Optic Countermeasures Group (2003-2005) – Research Engineer – Adelaide, Australia

- Simulation of Electro-Optic Countermeasures through a Matlab and C++ implemented model of aircraft and missile dynamics and control systems.
- Aircraft field trials and hardware testing to verify simulation. Working within a large team of Research Engineers on site at Evan's Head Bombing Range.
- Designed and implemented a hardware simulation results tool using Java Servlets with a MySQL database back end. Configuring Apache, Tomcat, MySQL.

Education

B.Eng (Mechatronic Engineering) (Hons) and B.Sc (Advanced) Majoring in Physics completed at the University of Sydney. Winner of the BAE undergraduate thesis presentation prize.

My undergraduate thesis explored creating covert passive imaging sensors based on the existing GPS satellite network. This involved both hardware and open source GPS software modification. GPS signal processing software was written in C++ and simulation of the reflected multi-path signals in Matlab. Innovative use of pre-existing hardware which had not been previously explored.

Recommendations

“Jean's contributions have had a very positive impact on a highly visible set of features in Emotiv's software product. She is a well-organized, creative problem solver, with an impressive set of mathematical and engineering skills. I would be delighted to work with her again!”

Julian Wixson, Software Engineer (SDK Team Lead), Emotiv Systems
worked with Jean at Emotiv

“Jean is an absolute gem to work with. She's hard working, reliable, and very conscientious about her work ethic. A brilliant and creative research engineer, Jean was one of the original developers for our Expressiv Suite, and has been critical in building it into to the phenomenal detection asset it has currently become.”

Lori Washbon, Creative Director, Emotiv Systems Inc.
worked with Jean at Emotiv

Activities and Achievements

- Graduated with Weighted Average Mark at Distinction level
- University Entrance Rank of 95.45
- Certificate in Music Production from the School of Audio Engineering(SAE).
- Artwork displayed in 1998 Art Express Exhibition and Ivan Dougherty Gallery.
- [False Profit Labs](#) – I work in a group which creates large scale fire art and interactive art installations.
- I have a website which includes some art and technical related projects at jeanrintoul.com