

# Chris Duran

CURRICULUM VITAE

<http://chrisduran.eu/>

## Profile

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I am currently in the final year of a PhD at the University of Queensland in the field of Bioinformatics. My research focuses on the integration, analysis and visualisation of genomic data for crop species, generated using second- generation sequencing technology. My background is in computer science and evolutionary theory. I also have commercial experience in both IT and Bioinformatics. In my spare time I am passionate about board sports such as surfing and snowboarding, as well as traveling to pursue these activities. I enjoy travelling and have lived and worked abroad in Oxford, UK for several years. When I finish my PhD I wish to work in an environment where I can apply and share the knowledge and experiences I have gathered in both Bioinformatics and IT, as well as continue to learn and develop my skills in these areas.

## Education

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### **PHD (BIOINFORMATICS), UNIVERSITY OF QUEENSLAND, BRISBANE, AUSTRALIA**

**CURRENT**

THESIS: *The development and application of bioinformatics tools for the integration and analysis of crop genetic and genomic data*

### **BACHELOR OF SCIENCE, UNIVERSITY OF QUEENSLAND, BRISBANE, AUSTRALIA**

**2004**

MAJORS: Computer Science, Evolutionary Biology.

## Skills

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### **OPERATING SYSTEMS**

High level of experience in using unix-based systems, primarily OSX and Linux

Some experience with Solaris and Windows systems

Understanding and application of command-line scripting under BASH

Application and web server configuration, scripting and administration (\*nix-based, primarily OSX and Debian distributions)

### **PROGRAMMING**

Object-Oriented programming, with high exposure to Java (J2SE; primary language), Python and some Scala.

Experience with using Java JUnit unit testing frameworks.

Experience with Perl, PHP, Regular Expressions, Bash scripting.

Information services, including XML, XML Schema (XSD), JSON, RDF.

### **DATABASES**

Strong understanding of relational database design and normalisation

Over seven years experience using MySQL relational database suite, and working knowledge of postgresSQL and SQLite

Some experience with NoSQL technology, primarily eXist XML database application

### **WEB DEVELOPMENT**

Experience with J2EE programming, specifically JSP/Servlet systems

Web framework, primarily using Python-based Django (1.1) web toolkit

Web 2.0 development experience, including (X)HTML, CSS, Javascript, AJAX

Experience with interfacing web applications with database systems

### **COMMUNICATION**

Given presentations at working groups and institutional seminars

Presented work at international working groups

Two years experience tutoring 2nd Year IT students (Java)

Trained lab members in using unix-based systems for running command-line interface, unix-based bioinformatics applications

## Work Experience

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### **SECOND-YEAR COMPUTER SCIENCE TUTOR (JAVA), UNIVERSITY OF QUEENSLAND, BRISBANE, AUSTRALIA** **2008-PRESENT**

Employed as a tutor for CSSE2002 'Programming in the large', focussing on teaching students to implement robust and modular code components. Specifically teaching object-oriented programming concepts, exception handling, data and iteration extraction, threading, recursion, specification and unit testing.

Average work load of 4-5 classes per semester, with between 20-35 students per class.

### **SOFTWARE & DATABASE DEVELOPER, MEDICAL RESEARCH COUNCIL, HARWELL, UNITED KINGDOM** **2006**

Lead the software development of the EuroPhenome database, based in the Bioinformatics Group and interacted with related groups across Europe.

Developed and refined data capture standards between centres and researchers

Added new and extended functionality to the user interface.

Research and development of data mining and knowledge extraction interfaces.

Continued development/adaption of the underlying relational database (mySQL).

Integration with existing phenotype ontologies.

Maintenance of associated websites

Extensive documentation of processes and progress.

*In addition to my base duties, I have undertaken various projects during my tenure in this position, as well as having taken on extra responsibilities:*

Setup of the EuroPhenome website. Designed and built the EuroPhenome template, which is in use now for both the portal website and the current data browser. XHTML (Strict) compliant.

Draft SOPML design. Draft design for a standardised XML schema for Standard Operating Procedures. Target scope is mouse genotyping labs internationally.

### **SENIOR SERIALS LIBRARY ASSISTANT, OXFORD UNIVERSITY, UNITED KINGDOM** **2005-2006**

Maintain accurate records for journals, series, etc. using the Library Management System

Maintaining a complex matrix in support of serials (vendors, patterns, claims, etc)

Liaison with subscription agents to ensure the library makes best use of services

Training and supervision of staff with regards to serials related work

Responsible for ensuring staff manuals are up-to-dat regarding Serials and IT Procedures

### **DIRECTOR, DOTZERO WEB DESIGN STUDIO, BRISBANE, AUSTRALIA** **2003-2004**

Operational and fiscal success of the business

Web development work - both technical and customer service

Onsite network configuration for small/medium businesses

## Awards and Achievements

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### **CANOLA BREEDERS BEST STUDENT AWARD** **2009**

Student speaking prize awarded at Sixteenth Biennial Australian Research Assembly on Brassicas. Ballarat, Victoria, Australia

### **DEAN'S COMMENDATION FOR HIGH ACHIEVEMENT** **2004**

Awarded by the University as recognition of students enrolled in coursework programs who have excelled academically for a given semester.

## Publications and Presentations

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### JOURNAL ARTICLES

- Duran C**, Boskovic Z, Imelfort M, Batley J, Hamilton NA, Edwards D (2009) CMap3D: A 3D visualisation tool for comparative genetic maps. *Bioinformatics*. (Accepted NOV 2009).
- Duran C**, Appleby N, Vardy M, Imelfort M, Edwards D, Batley J (2009) Single nucleotide polymorphism discovery in barley using autoSNPdb. *Plant Biotechnology Journal*. **7**, 326-333.
- Imelfort M, **Duran C**, Batley J, Edwards D (2009) Discovering genetic polymorphisms in next-generation sequencing data. *Plant Biotechnology Journal*. **7**, 312-317.
- Duran C**, Appleby N, Edwards D, Batley J (2009) Molecular Genetic Markers: Discovery, Applications, Data Storage and Visualisation. *Current Bioinformatics*. **4**, 16-27.
- Duran C**, Appleby N, Clark T, Wood D, Imelfort M, Batley J, Edwards D (2009) AutoSNPdb: an annotated single nucleotide polymorphism database for crop plants. *Nucleic Acids Research*. **37**, D951-D953.
- Hancock J, Adams N, Aidinis V, Blake A, Blake J, Bogue M, Brown S, Chesler E, Davidson D, **Duran C**, *et al.*, (2007) Integration of mouse phenome data resources. *Mammalian Genome*. **18**, 157-63.

### CONFERENCE PROCEEDINGS

- Duran C**, Stiller JM, Imelfort M, Eales D, Hong CP, Berkman P, Marshall D, Vardy M, Raman H, Batley J, Edwards D (2009) Sequencing and re-sequencing Brassica genomes. *16th Australian Research Assembly on Brassicas*. 145-149.

### BOOK CHAPTERS

- Duran C**, Boskovic Z, Batley J, Edwards D. Brassica Bioinformatics. In: 'Vegetable Brassicas' (Ed. Sadowski J). In press, accepted March 2009. (Science Publishers, Inc: New Hampshire).
- Duran C**, Edwards D, Batley J (2009) Molecular marker discovery and genetic map visualisation. In: 'Bioinformatics: Tools and Applications.' (Eds D Edwards, D Hanson, J Stajich) pp. 165-189. (Springer: New York).
- Duran C**, Edwards D, Batley J (2009) Genetic maps and the use of synteny. In: 'Plant Genomics: methods and protocols' (Eds D Somers, P Langridge, JP Gustafson) pp. 41-56. (Humana Press: New York).

### PRESENTATIONS

- Sequencing and re-sequencing Brassica genomes.  
*16th Australian Research Assembly on Brassicas*. Ballarat (14-16 Sep 2009).
- Computational marker discovery and visualisation in cereals.  
*ACPPFG Bioinformatics Meeting*. Adelaide (19 Jun 2009).
- SNP discovery in cereals using autoSNPdb.  
*CompBio. Institute for Molecular Biosciences*, Brisbane (16 Apr 2009).  
*ACPPFG Joint Research Meeting*. Adelaide (23-24 Mar 2009).
- Integration and visualisation of plant genetic and genomic data.  
*ACPPFG Joint Research Meeting*. Adelaide (7-8 Oct 2008).  
*CompBio. Institute for Molecular Biosciences*, Brisbane (19 Jun 2008).

### CONFERENCE POSTERS

- Duran C**, Boskovic Z, Imelfort M, Batley J, Hamilton NA, Basford K, Edwards D. CMap3D: A three-dimensional visualisation tool for comparative genetic mapping data. *ACPPFG Genomic Symposium*, Adelaide (16-18 Nov 2009).
- Duran C**, Appleby N, Edwards D. Integrating genetic and genomic data for wheat and barley. *ACPPFG Genomic Symposium*, Adelaide (22-24 Oct 2007).
- Appleby N, **Duran C**, Imelfort M, Wood D, Batley K, Edwards, D. Barley AutoSNPdb: A Single Nucleotide Polymorphism database for Barley. *ACPPFG Genomic Symposium*, Adelaide (22-24 Oct 2007).

## Referrals

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Available on request