

Hamza BENNANI

Applied Mathematics &
Computer Science Engineer
Ph.D. Student At University of Otago

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WORK EXPERIENCE

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|-------------------------|---|
| OCT 2016-
NOV 2016 | Research Assistant, Department of Oral Sciences, University of Otago – Dunedin, New Zealand
Signal processing: snoring detection in time domain, frequency domain and time frequency domain |
| JAN 2012-
To Present | Demonstrator, University of Otago – Dunedin, New Zealand <ul style="list-style-type: none">• Lab demonstrator for various papers (Department of Computer Science)• Private tutor: individual and group tutoring• Individual tutor for Disability Information and Support Services• Tutor at Toroa College and Studholme Hall |
| JAN 2013-
MAR 2014 | Statistical Analyst, Department of Oral Sciences, University of Otago – Dunedin, New Zealand
Perform numerical analysis and shape analysis on a data set |
| NOV 2012-
APR 2013 | Research Assistant, Geography Department, University of Otago – Dunedin, New Zealand
Develop a GUI in MatLab for tide analysis |
| OCT 2012-
DEC 2012 | Numerical Analyst, Sir John Walsh Research Institute, University of Otago – Dunedin, New Zealand
Carrying out analysis of research results |
| NOV 2011-
FEB 2012 | Consultant, Department of Oral Sciences, University Of Otago – Dunedin, New Zealand <ul style="list-style-type: none">• Develop software for qualitative analysis in orthodontic research• Matlab code for EMG analysis for muscles activity |
| JUL 2010-
JUL 2012 | Freelancer, Auto-Consultant, Hamza BENNANI – Paris, France
SIRET Id: 523 387 926 00018, Programming, computer vision, consulting, project manager |
| SEP 2009-
AUG 2010 | Developer, Applied Mathematician, T-Systems International – Darmstadt, Germany <ul style="list-style-type: none">• Computer Vision: Image processing, Image Recognition, Project: “barcode scanner”• Artificial Intelligence: genetic algorithm, heuristic method• Creation of an User Interface for Android• Character Recognition• API for “Real” on Android |
| MAR 2008-
JUL 2009 | Technician for a profiling platform, ENSEEIHT/Sopra Group – Toulouse, France <ul style="list-style-type: none">• Dynamic Web Programming• Data Mining, Profiling web users |
| AUG 2008 | Working placement in Gaz et réseau Distribution de France(GrDF) – Toulouse, France <ul style="list-style-type: none">• Statistical studies on call processing activity• Commented analysis of received data• Creating computer tools to help activity monitoring |
| 2005 - 2009 | Maths, physics, IT, French and Arabic tutor, secondary school, high school and classes preparing for top-level French engineering universities |

EDUCATION

JUN 2011	University Of Otago, Dunedin, New Zealand
Jan 2017	Thesis: "Three Dimensional Reconstruction of Human Lumbar Spine from Bi-planar Radiographs" Advisors: Prof. Brendan MCCANE & Prof. Geoff WYVILL (had two deferrals of eight months) Evaluation of a method for creating 3D models of vertebrae that is applicable to other free-form shapes; Landmark free ASMs of lumbar vertebrae; Definition and evaluation of a process for estimating the shape and position of vertebrae from uncalibrated bi-planar x-rays. submitted on January, 31 st , 2017
OCT 2010	Goethe Universität Frankfurt, Frankfurt, Germany
MAR 2011	One Semester in Physics Department, Master in Neuroscience (withdrew to pursue PhD)
SEP 2009	Technische Universität Darmstadt, Darmstadt, Germany
AUG 2010	Specialty human computer system: computer vision, machine learning, image processing Computer science: c/s technology, web services, rich internet applications
SEP 2007	ENSEEIH, Toulouse, France (top-level French engineering school, National Polytechnic Institute of Engineering in Electrotechnology, Electronics, Computer Science, Hydraulics and Telecommunications)
AUG 2009	Part of the applied mathematics and computer science department Optimal control, modelling, ODE, PDE, Krylov solvers, numerical solving

PUBLICATIONS

7. Morphometric growth changes of the nasopharyngeal space in subjects with different vertical craniofacial features.
Park JE, Gray S, Bennani H, Antoun JS, Farella M. (Sep 2016) Am J Orthod Dentofacial Orthop. 150(3):451-548
DOI: 10.1016/j.ajodo.2016.02.021
6. Three Dimensional (3D) Lumbar Vertebrae Data Set.
Bennani H, McCane B, Cornwall J. (Aug 2016) Data Science Journal. 15(9):1-15
DOI: 10.5334/dsj-2016-0098
5. 3D Reconstruction From Bi-Planar X-Rays.
Bennani H, McCane B. (Jul 2016) The Dodd-Walls Centre for Photonic and Quantum Technologies Symposium Queenstown - New Zealand
4. Validity of the CVM method to determine mandibular length Response.
Gray S, Bennani H, Farella M. (Jul 2016) Am J Orthod Dentofacial Orthop. 150(1):7-8
DOI: 10.1016/j.ajodo.2016.04.013
3. Morphometric analysis of cervical vertebrae in relation to mandibular growth.
Gray S, Bennani H, Kieser JA, Farella M. (Jan 2016) Am J Orthod Dentofacial Orthop. 149(1):92-98
DOI: 10.1016/j.ajodo.2015.06.028
2. Neck and shoulder muscle activity of orthodontists in natural environments.
McNee C, Kieser JK, Antoun JS, Bennani H, Gallo LM, Farella M. (Jun 2013) J Electromyogr Kinesiol. 23(3):600-607.
DOI: 10.1016/j.jelekin.2013.01.011
1. Computer modelling of vertebral body shape.
Bennani H, Cornwall J, McCane B. (Apr 2013). Clinical Anatomy. 26: 641-660
DOI: 10.1002/ca.22235

SCHOLARSHIPS AND AWARDS

JUN 2016	Award for the second best poster at The Dodd-Walls Centre Symposium, Queenstown, New Zealand
JAN 2016	Summer School Teaching Excellence Awards, Best Tutor/Demonstrator, Otago University Students Association, Dunedin, New Zealand
Student's Feedbacks:	<p>"He had an uncanny ability to gauge people's level when it came to understanding and writing code and would vary his degree of help accordingly. For students that were new to code he would have the patience to explain step by step until you understood the code you were writing. If students who have coded before had problems, he would come around and point at areas where they should check again, letting them work out their own bugs. For times when the same question were asked (he also had a good memory for who asked what questions throughout the semester), he would show you how to use the resources around you, be it online or in the lecture notes, to work out your own questions. If that did not work, he would again sit down and go through your code until you understood what it does. In short, he not only helped teach how to code but also how to be a self-efficient and independent."</p> <p>"He's a really good demonstrator who is very helpful, but not overly helpful. I like how he points or hints to what is wrong in your code but actually gets you to fix it. He's also pretty funny and easy to talk to."</p> <p>"Being hilarious."</p>
JUN 2016	Grant from Russell Education Trust
JAN 2015	Grant from Russell Education Trust
JAN 2014	Grant from Russell Education Trust
JUN 2011	Scholarship for PhD at University of Otago for three years

FOREIGN LANGUAGES

FRENCH:	Bilingual (DALF: Diplôme Approfondi en Langue Française)
ENGLISH:	Fluent, TOEIC (2009, score: 910), IELTS (2011, score: 7)
GERMAN:	Intermediate knowledge, one year and a half living in Germany, working and studying
JAPANESE, SPANISH:	Beginner
ARABIC:	Native speaker

IT SKILLS

Programming Skills:	PYTHON, JAVA, C/C++, ASSEMBLY, notions in SYMBIAN (7months in a project), notions in ANDROID (5 months of development, \LaTeX)
Scientific Calculus:	MATLAB/SIMULING, Fortran 77/90, Maple
Applied Maths:	ODE, PDE, Optimal Control, Geometrical Approximation, Computer Vision
Web Technology:	Java/J2ee (servlets, JSP, EJB), HTML/CSS, PHP
Data Base:	SQL, PL/SQL, Access
Operating Systems:	Windows, Mac, Unix and Linux Systems
Software skills:	Eclipse, CarbideC++, DevC++, NetBeans, Windev, PhotoFiltre, EasyPHP, MS Visual Studio 2010, MS Office, Osirix, PhotoScan
Projects:	Java: Simulation of diagrams of states and realisation of the game of 13 Matches C: study and simulation of a system, of particles and the machine enigma Caml: implementation of Huffman compression/decompression Stochastic calculation: study and simulation of a station of toll Equations in the partial by products: implementation of different methods of resolution

PERSONAL BACKGROUND

Hobbies:	Travelling: Morocco, Spain, France, Germany, Turkey, UAE, HK, Malaysia, Australia, Ethiopia and New Zealand Juggling, collecting old banknotes from different countries, chess Between 2007 and 2009: supervision and initiation to circus games for children in primary school Web Sites : http://www.hamzabennani.com , http://www.konig.co.nz and Internal Management System for Meat Processing, at König Gourmet Foods Ltd, Green Island, Dunedin, New Zealand
Community life:	President of AMGE-Toulouse in 2009 (Moroccan students association) and in charge of social activities in 2008 Participation in several events in my engineering school: organisation of conferences, of projections, business/school meetings, and engineers/students meetings Participation in Middle East Simulation project as member of the 2010 organising team and as webmaster Webmaster of graphics lab website (2011, 2012) Sponsorship chair of NZCSRSC 2012.

REFERENCES

References available upon request