

**Abdel-Razzak Natsheh**

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**Date of Birth:** 17 August, 1982.

**Nationality:** British

**Education**

***PhD in Computer Engineering, Manchester Metropolitan University [expected to finish on Feb 2011]***

**Thesis Title: Automated Tool for Diagnosis of Paranasal Sinus Conditions**

Supervisors: Dr. Prasad Ponnappalli, Dr. Atef El-kholy

**Brief Synopsis of Research:**

Reporting of CT scans of Paranasal Sinuses requires detailed examination by an expert to arrive at a diagnosis. The current project is aimed at developing a computer-based automated diagnostic tool for reporting CT scans of paranasal sinuses condition. One of the objectives of this project is to produce a reliable classification that is used in sinus diagnosis in terms of the scale used by the medical experts. The final aim would be to produce a computer-based system that can perform the task of analysing the CT images and producing a preliminary diagnosis.

The current Sinus Diagnostic System (SDS) is developed using techniques based on classical image processing techniques in conjunction with Artificial Neural Networks (ANN) techniques. Initial work involved identifying the Region of Interest (ROI) that represents the four sinus areas of interest, maxillary, ethmoid, sphenoid and frontal. The analysis of the sinus areas was performed using a technique based on a version of ANNs called Self-Organising Maps.

During my PhD I have also led seminars, supervised undergraduates in the laboratory and taken a course on "Effective Tutoring and Assessment".

**Research Interests:**

My current research centers on medical imaging, image processing and artificial intelligence (Neural Networks).

***2000 - 2005 BSc Computer Engineering, an Najah National University.***

**Modules included** artificial Intelligence, Structured Programming, Software Engineering (Including Object Oriented Theory), Networks Communication Systems, electronics, microprocessor, microcontroller, and signal processing ...

## Experience

### Consultation

#### **(2015-Present) Re-design and develop An-Najah website and its learning management system LMS**

**Task Description:** Project Manager of a unit at ANU University that works on re-designing and developing a new website for the university. The project is still on progress.

#### **(2014-2015) Capacity Building workshops for Palestinian Technical University Khadori (PTUK)**

**Task Description:** Project coordinator on a project funded from **Amideast** to provide training services to PTUK university faculty staff on new learning and teaching methodologies such as problem and project based learning, Community based learning, art of leading discussion, using ICT in teaching, ILOs and assessment.

#### **(2014-2015) Develop a customised learning management system LMS for universities and schools**

**Task Description:** I was the project manager of a leading team at intellect to develop and customise a LMS platform for universities and schools in order to increase quality of learning and teaching process in schools and universities. **World Bank** mainly funded this project.

#### **(2012-2013) IT-Consultant for Palestinian Information Technology Association (PITA)**

**Task Description:** The main task was to carry out a needs assessment study on analysing gap between academia and ICT private sector in terms of ICT university graduates and if the graduate students have the needed skills to get them employed. The task included providing recommendations on how the gap can be reduced between two parties.

#### **(2012) member of e-learning national strategic planning committee in Palestine**

**Task Description:** To develop e-learning guidelines and policy in Palestinian universities

#### **(2011) In-House IT-System development Needs Analysis Study for Palestinian Exchange (PEX)**

**Task Description:** To

#### **(2009 -2011) Medical Imaging Analysis IT expert at Old- Trafford Hospital**

**Task Description:** To propose automated IT medical imaging analysis systems for ENT department at OLD-TRAFFORD hospital in Manchester. The task focused on developing automated solutions for diagnosing sinus CT scans for patients. And to identify requirements

### Management

#### **(2014 – Present day) Member of IBDA'A board directors**

**Ibda'a:** Are a university body (Ibdaa "Innovation") that exists in four Palestinian universities and operates on the basis of helping students and faculty staff members with innovative ideas to implement them and create startups out of them in cooperation with the private sector/industry. We aim to improve the Palestinian economy, create jobs, empower women in the work force, build students' skills in the industry, and bridge the gap between academia and the industry through encouraging the

entrepreneurial spirit in the Palestinian educational systems. We currently have ten (10) projects that we are supporting (seed funding) at the four universities. We believe, as has been proven world-wide, that entrepreneurship and start-ups are key elements in creating new job opportunities and hence reduce unemployment and creating economical growth.

**(2013- Present day) Project Manager of IT-bridge program at ANU**

**IT-bridge program:** is a program that aims to link ICT private sector with ANU by redesigning 8 senior and junior courses. The new course outlines focus on adopting new learning and teaching methodologies and provide practical training by making students implement real company projects and work under supervision of company mentors.

**(2012- Present day) Associate Director, Centre of Excellence in Learning and Teaching (CELT), An-Najah National University, Palestine**

**CELT:** The establishment of the Center for Excellence in Learning and Teaching represents a major step forward towards improving the quality of higher education in Palestine. The Center seeks to achieve excellence in the education processes, which will maintain our position as a leading higher education institution in the country. The Center provides a rich environment for academics from different disciplines to exchange innovative experiences and ideas and to collaborate with researchers and trainers from internationally renowned centers of excellence. The Center will give An-Najah faculty and researchers greater opportunities to participate in distinguished professional development programs.

**(2011- Present day) Capacity Building Trainer in (project and problem based learning, project management)**

**Education**

**(2011 – Present day) Assistant Professor, Dept. of Computer Information Systems, An-Najah National University, Nablus, Palestine**

**Subjects I have taught:**

Software Engineering	Artificial Intelligence Systems
Web design	Multimedia Applications.
Computer Networks.	Java programming.
Engineering problem solving.	Advanced Computer systems.
Image Processing (MSc)	Advanced Programming (MSc)
Computer Architecture	Health Information Systems
Microprocessors 1	Artificial Intelligence
Web Development	Project Management

**(2009 – 2011) full-time lecturer, Dept. of Engineering and Technology, Manchester Metropolitan University, Manchester, UK**

**Subjects I have taught:**

Mathematics	Mechanical Engineering science.
Web page design	Multimedia Applications.
3-D design.	Java programming.
Engineering problem solving.	Advanced Computer systems.
Image Processing (MSc)	Advanced Programming (MSc)
Electronics 1	Advanced Electronics
Microprocessors 1	Artificial Intelligence

**Supervised postgraduate and undergraduate students in their research projects.**

**(2006 – 2009) Teaching Assistant, Dept. of Computer Science , University of Kent, Canterbury, UK**  
led seminars and tutorial classes, supervised undergraduates in the laboratory and taken a course on "Effective Tutoring and Assessment".

### **Skills**

General skills in research project management and data analysis. Specific expertise and interests in:

#### ***Medical Imaging Analysis***

- Medical Image Processing
- Medical Image Analysis
- Medical Image Segmentation
- Computer vision: classification and clustering
- Smart Diagnosis

#### ***Web Design and Development:***

- Front End: HTML 5, Java script, J query, bootstrap
- Back End: PHP, MVC, PHP Frameworks

#### ***Health Information Systems***

- Health Records (E-HR)
- Mobile Health Care
- Picture Archiving and communication system (PACS)

#### ***Teaching Skills:***

- Taught different type of subjects to different level of students (from year 1 to MSc level)
- Adopt new methodologies in learning and teaching such as problem and project based learning methods
- Supervise lab sessions for undergraduate and postgraduate students and have supervised the undergraduate and postgraduate research projects.

#### ***Project Management***

- I met without fail, the many deadlines in my teaching and supervisory duties. I have extensive experience of juggling different tasks and bringing these to a successful conclusion.

#### ***Other skills***

- Knowledge of research methodologies
- Statistical software: extensive experience with MATLAB.
- Data and information collection
- Writing and presenting reports

## Referees

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| <p>[1] Dr. Prasad Ponnappalli – (Senior lecturer)<br/>Manchester Metropolitan University<br/>Department of Engineering and Technology,<br/>Chester Street, Manchester M1 5GD<br/>Email: <a href="mailto:p.v.s.ponnappalli@mmu.ac.uk">p.v.s.ponnappalli@mmu.ac.uk</a><br/>Tel: +44 (0) 161 247 1659</p> | <p>[2] Dr. Fady Draidi (HOD of CIS program)<br/>An-Najah National University Department<br/>of Computer Information Systems, Nablus,<br/>Palestine.<br/>Email: <a href="mailto:draif@najah.edu">draif@najah.edu</a><br/>Tel: +970 (9) 2345113</p> |
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- [3] Prof. Maher Natsheh (Acting President of ANU)  
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## Conferences, Presentations and Courses Attended

- **SGAI international conference, Cambridge, UK 2007.** Presented Paper
- **NCAF Meeting, Oxford, 2008,** presented poster.
- **BRS (British Rhinological Society) annual meeting, Cheltenham, UK, 2009.**
- **IEEE Conferences (CSNDSP (2 PAPERS), IST (PAPER)), 2010**

## Publications/Conference Papers

- [1] Natsheh, P.V.S. Ponnappalli, N. Anani, A. Al-Kholy. Automated Tool for Diagnosis of Sinus Analysis CT Scans, Proceedings of AI 2007 the Twenty-Seventh SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, 2007, Cambridge, UK.
- [2] Abdel-Razzak Natsheh, Atef El-Kholy, Prasad VS Ponnappalli, Peter Norburn, Nader Anani. AUTOMATED TOOL FOR REPORTING CT SCANS OF PARANASAL SINUSES, BRS (British Rhinological Society), 8th annual meeting, May 2009.
- [3] A.R. Natsheh, P. Ponnappalli, N. A. Anani, D. Benchebra and A.El-Kholy, "Neural networks-based tool for diagnosis of paranasal sinuses conditions," 7th IEEE, IET International symp. on comm. sys, networks and digital signal processing (CSNDSP 2010), Newcastle Upon Tyne, UK, 21-23 July 2010.
- [4] D. Benchebra, P. Ponnappalli, N. A. Anani and A. R. Natsheh, "A novel algorithm for completing fragmented boundaries in images," the 7th IEEE, IET International symp. on comm. sys, networks and digital signal processing (CSNDSP 2010), Newcastle Upon Tyne, UK, 21-23 July 2010.
- [5] A.R. Natsheh, P. Ponnappalli, N. A. Anani, D. Benchebra and A.El-Kholy, "Automated tool for diagnosis of paranasal sinuses conditions," submitted to the IEEE, Medical Imaging Journal. 2010.
- [6] N. Anani, D. Benchebra, P. Ponnappalli, and A.-R. Natsheh, "Prediction of Line Current Harmonics in an AC-DC Converter Using Neural Networks," in the proceedings of the 2010 International Symposium on Industrial Electronics and Applications, Penang Malaysia, 2010, pp. 66-69.
- [7] EM. Natsheh, AR. Natsheh, A. Albarbar, "Intelligent controller for managing power flow within standalone hybrid power systems", IET Science, Measurement & Technology 7 (4), pp 191-200

## Professional Memberships

AMIET

Institute of Engineering and Technology, 2006.

(NCAF).

The Natural Computing Applications Forum, 2008.