

Bilal Tounsi

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Education

2010 – 2011: MSc Petroleum Refining Systems Engineering from **Surrey University** UK. Studied the following modules: Process and Energy Integration, Refinery and Petrochemical Processing, Introduction to Petroleum Production, Process Modelling and Simulation, Process Systems Design, Process Safety and Operation Integrity, Optimisation and Decision Making, and Supply Chain Management.

2006 – 2009: MSc Industrial computing from the **Ecole Nationale Supérieure d'Informatique** (ESI) Algeria. Studied the following modules: Computer Security, Human Machine Interface, Advanced Data Structure, Digital Signal Processing, Process Control, Artificial Intelligence, Computer Vision, Advanced Networks, and Embedded Systems Design.

2000 – 2005: Computer Systems Engineer from the **Ecole Nationale Supérieure d'Informatique** (ESI) Algeria. A five years Ingénieur d'état degree covering computer engineering fundamental and advanced topics with strong focus on theoretical and applicable mathematics.

Experience

2013 – Present: Senior Software Developer at **Aveva** Cambridge office (<http://www.spiralsoft.com>). Main duties and skills:

- Work as part of several Agile Scrum teams developing a suite of applications used in oil refining and mining supply chain optimisation.
- Develop and maintain the user interface using **C#, MVVM, WinForms, WPF, DevExpress, C++, C++\CLI**, and **MFC**.
- Develop web components using **ASP.NET Core, Azure, Node.js, REACT** and **REST APIs**.
- Working on migrating monolithic application to **micro-services architecture**.
- Write web components **Docker** images for development and testing.
- Develop and maintain reusable custom WinForms user controls that are used in different software products.
- Develop and maintain multi-tier business logic and core engine.
- Write and maintain core and UI unit tests using: **MS Test, NUnit**, and **moq**.
- Strong understanding of **SOLID** principles and **OOP design patterns**.
- **Scrum master** responsibilities including: Kick-off, daily stand-up, sprint warp up, planning and retrospective meetings.
- Mentor and train junior developers to understand the code base and participate in pair programming.
- Develop and support a **UI automation framework** which allows QA team to write coded UI tests and build a test automation framework. The framework has been developed using: **C#, C++**, and **Microsoft COM interface**.
- Share knowledge and discuss technical issues through regular cross-teams presentations.
- Tools used: **Visual Studio 2012-2019, Resharper, Azure DevOps, Git, TeamCity, Beyond Compare**.
- Asynchronous programming using **TPL** and **Reactive Extensions Rx**.

2012 – 2013: Software Developer \ Analyst at JBA Risk Management UK (<http://www.jbarisk.com>). Main duties and skills:

- Implement Monte-Carlo simulation algorithms for natural catastrophe loss modelling.
- Develop and maintain a desktop software used in the insurance and re-insurance industries.
- Develop a catastrophe loss modelling software that runs on an **IBM Netezza** data warehouse.
- Tools and technologies used: **C#, PostgreSQL, C++, Python, IBM Netezza, SQL, Visual Studio 2010.**
- Create and maintain technical documentation and provide end user support and training.

2010 – 2010 (6 months): Software Developer at Joint-Venture **Sonatrach-Anadarko** Algeria. Main duties and skills:

- Build scalable corporate intranet solutions within a **SharePoint 2007** environment using: **C#** and **ASP.NET**.
- Develop of SharePoint solutions (Web Parts, Libraries, Lists, Pages, etc.) using **Visual Studio 2008** and **SharePoint Designer**.
- Create and maintain technical documentation and provide end user support and training.

2007 – 2008: Software Developer Internship at the Advanced Technologies Development Centre Algeria (www.cdta.dz). Main duties and skills:

- Working within the Division of Architecture and Multimedia Systems to develop biometric identification systems.
- Development of a speaker recognition application using **C#, Visual Studio**, and **MS SQL Server**.
- Study and evaluation of different statistical modelling approaches including **Gaussian Mixture Model, Vector Quantization**, and **Bayesian Inference**.
- Study and evaluation of different **DSP** algorithms including **FFT, DCT, LPC, Cepstral analysis** and **windowing techniques**.
- Conduct technical presentation for potential customers and introducing current software solutions.

2007 – 2009: Freelance Web Developer developing various e-commerce modules using the following: **PHP, MySql, AJAX**, and **Javascript**.

Publications

- Multi-dimensional data visualization for process control, MSc Dissertation, 2011.
- Forensic Identification Reporting Using A GMM Based Speaker Recognition System Dedicated to Algerian Arabic Dialect Speakers, research paper, 2008.
- A Comparative Study of the Effectiveness of MFCC, LPCC, and LAR for GMM based Speaker Identification on the Timit Database, research paper, 2005.

Languages

Arabic (Native), English (Fluent), French (Fluent).