Eoghan **Hynes**

MSc Software Engineering

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Summary

Current masters by research student in A.I.T, researching Quality of Experience (QoE) of Augmented Reality (AR) based cyber-physical systems for safe adoption of machine interaction assistance in the Industry 4.0 ecosystem. Graduate of taught masters with first class honours in Software Engineering. 6+ years experience in C and C++ programming. 3+ years experience in C and Java programming specializing in Android app development, RESTful web service development using Play Framework with MySQL and MongoDB back end infrastructure and immersive environments using Unity IDE. Machine learning experience in R and Python. Data analysis experience using MATLAB. Data visualization experience using D3.

Education

Athlone Institute of Technology
Athlone, Co. Westmeath

MSc by research   *Oct. 2018 - Jun. 2019*

- Development of QoE evaluation system for AR using Unity IDE. Integrated Empatica E4 wrist device for real-time physiological signal acquisition. Integrated OpenFace for real time automatic head pose data acquisition, including facial Action Units for emotional state evaluation.
- Subsequent frequency domain signals processing of physiological data using MATLAB.
- Subsequent paper write up and submission to international conferences, including MMM,MMSys and QoMEX.
- Project supervisor for 2 x MSc Software Engineering students.
- Project supervisor for 3 x BSc Cloud Computing students.
- Second reader, project supervision of 3 x MSc Cloud Computing students.
- Irish Research Council (IRC) funding application submitted for 2019 funding round.

Athlone Institute of Technology
Athlone, Co. Westmeath

MSc in Software Engineering (Taught)   *Jan. 2017 - Jun. 2018 (Part-Time)*

- First class honours. GPA 80.75%
- Database Systems: MySQL, MongoDB.
- Computer Networks and Telecommunications: TCP/IP, LTE.
- Service Oriented Architecture: SOAP, REST.
- Rich Internet Applications: Single page web application, backbone, bootstrap.
- Data Science: Machine Learning, R.
- Software Design: C# OOP patterns, factory, decorator, visitor, iterator. Haskell functional programming.
- Data Visualization: D3.
- Agile Build and Delivery: Multinational team project development using agile SCRUM methodologies, continuous integration deployment pipeline using Github repository and Travis CI for a Java EE web applicant. This was a web based GP clinical practice patient appointment and prescription management application.
- IoT Project: RESTful web service using play framework, Android mobile app and FitBit API, MySQL and MongoDB databases. Physiological thresholds including heart rate and sleep patterns were used to trigger SMS message to I.C.E contact containing GPS location data.

Honors & Awards

2018	**President Seed Fund Scholarship**, Interviewed for and successfully awarded A.I.T President Seed award	*A.I.T, Athlone*
2001	**Distinction in French**, Erasmus student, Le Havre France 1999 - 2000	*C.I.T, Carlow*

Publications

Poster
A.I.T

QoE evaluation of AR using Rubik's cube solving application.   *2018*

- This poster has been used for more than 20 combined industry demonstrations and academic presentations.

A QoE evaluation of Augmented Reality for task assistance.
QoMEX, Berlin

Conference Paper   *Submitted 22 Jan. 2019*

- 11th international conference on Quality of Multimedia Experience.

Presentations

ICBE Industry working group. *Domoland Castle, Co. Clare*

INDUSTRY DEMONSTRATION *Nov. 2018*

- Exhibition of AR application developed in A.I.T.

European Composites, Plastics and Polymer Processing Platform conference *Hodson Bay, Athlone*

EXHIBITION *Jul. 2018*

- I exhibited execution of my AR application for assisted operation of the Fanuc injection moulding machine.

Work Experience

Athlone Institue of Technology *Athlone, Co. Westmeath*

LAB SUPERVISOR *Sept-Dec 2018*

- 'Agile build and Delivery' practical lab supervisor of 15 MSc Software students.
- Semester divided into 2 sprints.
- 3 teams of 5 used Java servlets to create web applications for movie rentals, holiday bookings and online shopping services.
- Teams used web repositories with continuous integration pipelines.
- Team member nationalities included Chinese, Indian, Polish and Irish
- All team members successfully passed this module under my supervision.

Athlone Institue of Technology *Athlone, Co. Westmeath*

PROJECT SUPERVISOR *Sept-June 2018-2019*

- 2*MSc projects:
- Book Recommendation web service using Play framework and Android mobile app.
- Activity prediction application using R shiny server and mobile phone accelerometer data.
- 3*BSc projects:
- Community alert web service using mobile app, server and web SMS api.
- IOT smart fridge using digital weighing scales and 'Tesco' web api.
- Delivery web service using server, database, mobile phone, and SMS api.

Tullamore Steel *Tullamore, Co. Offaly*

PARTNER *Jul. 2002 - 2018*

- Deployment test end users of Europe wide role out of IOS front end mobile application for 'Air Products Inc.' SAP system.
- Air Products Inc. SAP web tool power user, customer services, customer accounts, customer conflict resolution.
- Key and cash holder, accounting, invoicing, statements.
- Product delivery, stock management, pricing.
- 'Air Products' agent for Co. Offaly.

Extracurricular Activity

Trinity College *Hamilton Building, Trinity College*

DATA SCIENCE AND ENGINEERING CLUB *2018*

- I conducted a machine learning workshop in R to a full house of academics and industry specialists.
- Topics included KNN and Decision Tree classification Linear Regression predictions.
- I partake in deep learning and data engineering workshops.

Irish Reserve Defence Forces *Athlone, Co. Westmeath*

N.C.O, RANK: CORPORAL *Jun. 2005 - 2008*

- Team leadership and communications skills.

Newtonards Aerodrome *Newtonards, Co. Down*

STUDENT PILOT *2018 - PRESENT*

- Completed 4 hours dual training on flex wing microlight.
- Passed the Air Law exam.

Irish Water Safety *Tullmore, Co. Offaly*

QUALIFIED LIFE GUARD *1998*

- Completed Irish Water Safety Lifeguard training.