

# Curriculum Vitae

## Personal information

First name(s) / Surname(s) **Marie Farrell**  
Address Lecklinstown, Naul, Co. Dublin Ireland  
Mobile 0857483302  
E-mail(s) marie.farrell.2010@nuim.ie  
Nationality Irish  
Date of birth 26 September 1990  
Gender Female

## Education and training

Dates 01/10/2013 - Current  
Title of qualification pursued Structured PhD – Computer Science  
Title of thesis A Logical Framework for Integrating Software Models via Refinement  
Funding Irish Research Council  
Name and type of organisation providing education and training NUI Maynooth (University)  
Co. Kildare, Ireland

Dates 01/09/2009 - 01/06/2013  
Title of qualification awarded BSc Science - Computer Science and Applied Mathematics  
Principal subjects / occupational skills covered Year 1: 751/1000 First Class Honours  
Year 2: 713/1000 First Class Honours  
Year 3: 722/1000 First Class Honours  
Year 4: 767/1000 First Class Honours  
(see Additional Information for breakdown)  
Name and type of organisation providing education and training NUI Maynooth (University)  
Co. Kildare Maynooth  
Level in national or international classification Level 8

Dates 01/09/2003 - 30/06/2009  
Title of qualification awarded Leaving Certificate  
Principal subjects / occupational skills covered Mathematics, English, Irish, French, Physics, Chemistry and Art.  
Name and type of organisation providing education and training Loreto Balbriggan (Secondary School)  
Balbriggan, Co. Dublin

## Work experience

Dates	July 2012
Occupation or position held	SPUR Intern
Main activities and responsibilities	In 2012 I completed a research internship in collaboration with the Principles of Programming (POP) research group at Maynooth University. The aim of this project was to provide a case study of a metamodel based translation from Event B to Boogie2. Upon completion of this internship I constructed a technical report based on this research entitled "A Metamodel based translation from Event B to Boogie2". As part of this internship I attended the VerifyThis competition at FM2012 in Paris as the only undergraduate to take part.
Name and address of employer	NUI Maynooth, Maynooth, Co. Kildare
Dates	02/05/2011 - 20/09/2011
Occupation or position held	Research Assistant
Main activities and responsibilities	Putting in place a system that allows employees to work concurrently on the same project. Manufacture of adhesives. Interacting with research partners in Northern Ireland and Holland.
Name and address of employer	Eva-Tec Ltd, Balbriggan, Co.Dublin
Dates	01/01/2012 - 01/07/2012
Occupation or position held	Microsoft Imagine Cup National Team
Main activities and responsibilities	Title- docTek Systems  In 2012 my team (3 students) won the Irish finals of the Microsoft Imagine Cup Competition. Microsoft then funded our representation of Ireland at the world finals of this prestigious student technology competition in Sydney, Australia. Our project "doctek" built a system for managing Multiple Sclerosis. Using the latest mobile technologies we developed a patient app that provides a medicinal reminder and a symptom log which operates solely on one-touch interactions. By using cloud services, not only can patient accounts be synchronised across their devices, but the recorded information can be securely accessed by their doctor. With our technology, statistical and graphical overviews can be provided to the medical professional and background algorithms can detect trends of symptoms of the patients' progress that are indicative of a relapse, and discreetly alert the doctor that the patient may require attention. At both national and international competitions I successfully presented and demonstrated my work to International audiences as well as enduring intensive cross-examination from a panel of expert judges.
Dates	2012-present
Occupation or position held	Lab Demonstrator
Main activities and responsibilities	I have been employed as a lab demonstrator for the following modules: Software Verification, Discrete Structures, Algorithms and Data Structures, Databases and Introduction to Java.
Name and address of employer	NUI Maynooth, Maynooth, Co. Kildare

## Personal skills and competences

Computer skills and competences	<ul style="list-style-type: none"> <li>• Operating Systems: Windows, Linux, iOS</li> <li>• Programming Languages: Java, C, C#, Maple, Event B, PHP, HTML, Javascript, Boogie, Dafny, SQL, Haskell, Spec#, UML</li> <li>• Tools/Development Environments: Visual Studio, Eclipse, JCreator, Notepad++, ConText, My SQL, Rodin Platform, Coq</li> </ul>
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## Other skills and competences

### Achievements and Interests:

- Intel Medal for Best Final Year Student in Computer Science 2013
- Government of Ireland Postgraduate Scholarship awarded by the Irish Research Council 2013, this provides 4 years of funding to pursue my PhD
- My team ( 3 students) won the Irish finals of the Microsoft Imagine Cup Competition. Microsoft then funded our representation of Ireland at the world finals of this prestigious student technology competition in Sydney, Australia where we came in the top 20 software design teams in the world.
- In 2012 I was awarded a research scholarship under the NUI Maynooth SPUR programme as the nominee of the Department of Computer Science. This is a competitive university-wide programme designed specifically to give undergraduate students experience in working in a research environment.
- A list of presentations and publications can be found at <http://www.cs.nuim.ie/~mfarrell/>
- I have competed in the IEEE programming competition in 2011 and my team came within the top half of the results table, over 1500 teams competed.
- One of my main interests is horse riding.

## Additional information

### A breakdown of my exam results:

Year 4: Overall Grade: 1st Class Honours (767/1000)

CS357 Software Verification 76/100  
CS355 Theory of Computation 90/100  
CS416 Cryptography 81/100  
MT481S Mathematical Biology 74/100  
MT316A Geometry 75/100  
MT471S Maths Programming 91/100  
CS424 Programming Language Design and Semantics 58/100  
CS413 Neurocomputation 87/100  
CS370 Computation and Complexity 86/100  
MT316A Group Theory 63/100  
MT432C Analysis 67/100  
CS460 Computer Science Project 79/100

Year 3: Overall Grade: 1st Class Honours (722/1000)

Rank in class: Computer Science-2nd out of 10, Maths-5th out of 28

CS220 Computer Architecture 1 85/100  
CS253 Computer Architecture 2 70/100  
CS265 Software Testing 85/100  
CS320 Computer Networks 71/100  
CS230 Web Information Processing 81/100  
CS335 Software Engineering and Software Process 78/100  
MT311S Elementary Number Theory 71/100  
MT321S Risk Analysis 67/100

MT322S Operations Research 67/100  
 MT301C Ordinary Differential Equations 49/100  
 MT312S Cryptography 77/100  
 MT314S Coding Theory 64/100  
  
 CS130 Databases 75/100  
 CS210 Algorithms and Data Structures 1 84/100  
 CS211 Algorithms and Data Structures 2 88/100  
 CS240 Operating Systems 67/100  
 MT201S Calculus 3 62/100  
 MT202S Calculus 4 60/100  
 MT211S Linear Algebra 2 85/100  
 MT222S Introduction to Statistics 88/100  
 PS101 Biological and Developmental Psychology 60/100  
 PS102 Cognitive and Social Psychology 65/100  
 PS104 Research Design and Statistics 62/100  
 PS105 History and Methodology of Psychological Research 59/100

The reason that I sat 4 psychology modules in second year was due to the fact that I began my degree in a course called Psychology(through Science). However, upon completion of 2nd year I decided that my interests were in the fields of Applied Mathematics and Computer Science and thus transferred into Science(Double Honours).

Year 1: Overall Grade: 1st Class Honours (755/1000)

CH101 General Chemistry 75/100  
 CH101 General Chemistry 76/100  
 CS141 Introduction to Programming 80/100  
 CS142 Introduction to Computer Science 80/100  
 CS143 Introduction to Computer Systems 71/100  
 EP101 Experimental Physics 80/100  
 EP102 Experimental Physics 73/100  
 MT101S Differential Calculus 74/100  
 MT101S Integral Calculus 71/100  
 MT111S Linear Algebra 70/100  
 MT122S Data Analysis 68/100