Curriculum Vitae - Nelly Bencomo, March, 2021

Senior Lecturer in Computer Science, Aston University, UK

http://www.nellybencomo.me/

e-mail: nelly@acm.org

Personal Google Scholar page (h-index 32):

https://scholar.google.co.uk/citations?user=86H7HmkAAAAJ

URL of DBLP page:

http://dblp.uni-trier.de/pers/hd/b/Bencomo:Nelly.html

Publications: a complete list of publications is found in the last part of this CV and at http://www.nellybencomo.me/publications.html

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I exploit the interdisciplinary aspects of software engineering, comprising both technical and human concerns, while developing techniques for intelligent, autonomous and highly distributed systems.

I am Senior *Lecturer in Computer Science* in Aston University (since May 2013). Previously, I was an EU Marie Curie Fellow, from May 2011- May 2013 under a *Marie-Curie Fellowship (Grant) Requirements@run.time: Requirements-aware Systems*. I was a Senior Researcher at Lancaster University until May 2011 after being was awarded my PhD in Computer Science by Lancaster University in 2008.

Research: I am interested in all aspects of software modelling and specially the application of model-driven techniques, during the **development and operation of intelligent, autonomous and highly distributed systems**. Lately, I have focused on **quantification of uncertainty** and the use of Bayesian learning to support **decision-making for self-adaptation**. I am particularly interested in what I call *models@run.time*, the use of models and model-driven techniques during runtime. Research on models@run.time seeks to extend the applicability of models and abstractions to the runtime environment, with the goal of providing effective technologies for managing the complexity of evolving software behaviour while it is executing. Runtime models can be used, for example, to check correctness and consult the current state of a system during execution. Key benefits of runtime models are (1) runtime models can be used to match domain-specific knowledge, offer a richer semantics support for runtime decision-making related to system adaptation and other runtime concerns and (2) runtime models support reasoning and self-awareness (i.e. requirements-awareness, context-awareness). My recent focus has been on the synergy between AI in SE, as evidenced by my recent EPSRC project Twenty20Insight.

Teaching: I enjoy teaching! I have substantial teaching experience since my first job as a lecturer at the Universidad Central de Venezuela. Since joining Aston University, I have taught a range of modules across the Software Engineering part of the curriculum, at both undergraduate and master's level. I am a Fellow of the Higher Education Academy (HEA) and I hold a Postgraduate Certificate in Teaching & Learning.

Employment History

2019 - present, Senior Lecturer in Computer Science, Aston University, UK

2013 May –2019, Lecturer in Computer Science, Aston University, UK

2011 May – May 2013, Marie Curie Fellow, INRIA, Paris-Rocquencourt, France

2008 April – April 2011, Senior Research Associate, Lancaster University

2006 – March 2008, Research Associate, Lancaster University

2003 – 2006, Teaching Assistant, Lancaster University

Education

- PhD in Computing, Lancaster University, 2008

- MSc in Software Engineering, Universidad Central de Venezuela (UCV), (honourable mention) 1998

- Five-year Bachelor in Computing Science, Universidad Central de Venezuela, 1993

- Fellow of The Higher Education Academy (2016)

- Postgraduate Certificate in Teaching & Learning (2014)

Professional Memberships

I am a member of the ACM, ACM SIGSOFT, IEEE, BCS

Research

Grant and Awards

- EPSRC **Twenty20Insight** (2020-2023), Principal Investigator, £892,384 (total Value to Aston £586,520)
- Research Fellowship by Leverhulme Trust "**QuantUn: Quantification of Uncertainty using Bayesian Surprises**" (2019-2020) £54,983
- Marie Curie Action Intra-European Fellowship **requirements@runtime: Requirements-aware Systems**, €222.547, Inria, France, (2011-2013)
- 2 VC international PhD scholarships, Aston University, £60000 (2018)
- Faculty PhD scholarship, Aston University (2015)
- Visiting Scholar Funding 2015, Aston University, £1200
- M@TURE Models @ run Time for self-adaptive pervasive systems: enabling User-in-the-loop, REquirement-awareness, and interoperability in ad hoc settings, 24-month, €37.600, Inria-funded international collaboration grant (Brazil-France). We also won a second version (2014-2016) €37.600.
- Faculty PhD Studentship 3 years (Lancaster University), October 2003 – September 2006
- International Travel Grant, The Royal Academy of Engineering, 2009, 2008, 2007
- International Travel Grant, The Royal Academy of Engineering
- Student Travel Grant Association Internationale pour les Technologies Objects (AITO)

Honours and Awards

2019
- **RE 10 year Most Influential Paper Award 2019**, "RELAX: Incorporating Uncertainty into the Specification of Self-Adaptive Systems," by Jon Whittle, Pete Sawyer, Nelly Bencomo, Betty H.C. Cheng, Jean-Michel Bruel, Proceedings of 17th IEEE International Requirements Engineering Conference (RE09), pp. 79–88, September 2009, Atlanta, Georgia.

- **MODELS 10 year Most Influential Paper Award 2019**, “A Goal-Based Modeling Approach to Develop Requirements of an Adaptive System with Environmental Uncertainty” by Betty H.C. Cheng, Pete Sawyer, Nelly Bencomo, Jon Whittle, in the Proceedings of the ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MoDELS 2009), pp. 468–483, Denver, Colorado, 2009.

2013

- Best Award Paper in the 19th International Working Conference on Requirements Engineering (REFSQ), 2013

- Keynote speaker 14th Intl Working Conference on Variability Modelling of Software-Intensive Systems 2020 VAMOS 2020, Germany

- Keynote speaker in 14th IEEE International Conference on Autonomic Computing (ICAC 2017) http://icac2017.ece.ohio-state.edu/program/keynotes/

- **Award Program for the Researcher’s Promotion** (Programa de Promoción al Investigador PPI)

- **Best National Postgraduate Thesis** "UCV/PDVSA-CIED". Universidad Central de Venezuela / National Oil Holding - PDVSA.

PhD Students

Luis Garcia (Completed 2020)
Juan M. Parra (3rd Year), co-supervised with Dr. Antonio Garcia
Owen Reynolds (3rd Year), co-supervised with Dr. Antonio Garcia
Huma Samin (2nd Year) co-supervised with Prof Pete Sawyer

Master Students

Amel Balagoun, 2012 with honours, Université de Versailles Saint-Quentin-en-Yvelines, France

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Services to Research Community

- Member of the IEEE TCSE (Technical Council on Software Engineering) members-at-large (TCSE Elected Officers) https://tc.computer.org/tcse/

- Associate Editor, IEEE Transactions on Software Engineering (TSE) (2019-Present)

- Editorial Board Member, Journal of Software and Systems Modeling (2019-Present)

- General secretary of the BCS RESG Committee (special interest group for systems requirements) (2017-)

- Member of the Editorial Board of the Springer Journal of Software Engineering Research and Development (JSERD) since March 2016

- Member Program Board MODELS Conference since 2017, 2018, 202

- Member of the Steering Committee SEAMS 2014 – 2018

Grant Proposal Reviewing

- The Alan Turing Institute
- The Leverhulme Trust
- The Knowledge Foundation, Sweden
- National Science Foundation, USA
- EU ERA-NET CHIST-ERA Expert reviewer
- Swiss National Science Foundation (SNSF), Expert reviewer, Switzerland
- Natural Sciences and Engineering Research Council of Canada, Expert reviewer, Canada
- French National Research Agency (ANR), Expert reviewer, France
- Vienna Science and Technology Fund, Austria, project reviewer/evaluator

Regular Publications Reviewing

- ACM Transactions on Software Engineering and Methodology (TOSEM)
- ACM Transactions on Autonomous and Adaptive Systems (TAAS)
- Journal SoSyM Software and Systems Modeling, Springer
- Requirements Engineering (REEN) Journal
- Journal Computing, Springer
- JUCS Special issue on Software Components, Architectures and Reuse- Special Issue, Summer 2009
- IEEE Software Special Issue: Domain-Specific Languages & Modeling, Jul/Aug 2009
- Journal of Systems and Software - Special issue on Software Architectures and Mobility
- Journal Formal Aspects of Computing (FAC)

Program Committee and organization

I have served or serve as Program Committee member of several international Conferences
International Conference on Software Engineering (**ICSE**)
International Conference on Model Driven Engineering Languages and Systems (**MODELS**)
Symposium on Software Engineering for Adaptive and Self-Managing Systems (**SEAMS**)
International Working Conference on Requirements Engineering (**REFSQ**)
ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE**)
International Conference on Autonomic Computing and Self-Organizing Systems (**ACSOS**) previously SASO
Working IEEE/IFIP Conference on Software Architecture (**WICSA**)
International Conference on Conceptual Modeling (**ER**)
Ibero-American Conference on Software Engineering (**CIbSE**)

2022
- **Conference Chair (REFSQ), UK**
- **PC ICSE 2022**

2021
- **PC ICSE 2021**, Spain
- **Board PC MODELS 2021,** Japan
- **PC SEAMS 2021,** Spain
- **PC ESEC-FSE, 2021,** Greece

2020
- PC **SEAMS 2020**, Korea
- PC **MODELS 2020,** Canada
- Program Chair **of WICSA 2020**, Bahia, Brazil
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2019
- PC **ICSE 2019**, Canada
- PC **International Conference on Requirements Engineering** (**RE) RE-Next 2019,** Korea
- PC **SEAMS 2019**, Canada
- PC **MODELS 2019,** Germany

2018
- **ICSE 2018**, Sweden
- 20th **RE 2018**, **SEAMS 2018**, Sweden, 2018
- **MODELS 2018**, 14-19 October 2018 Copenhagen, Denmark
- **ER 2018**, China
- **CIbSE** 2018

2017
- PC 20th **MODELS 2017**, USA, 2017
- PhD Symposium Chair at **MODELS 2017**
- PC **RE-NEXT 2017**, Portugal, 2017
- PC Member **SEAMS 2017**
- **ER 2017**
- PC **CIbSE** Argentina, 2017

2016
- PC Member **ESEC/FSE** 2016
- PC 19th **MODELS 2016**, France, 2016
- PC PhD Symposium at **MODELS 2016**,
- PC **RE 2016**, China, 2016

- PC Member **SEAMS 2016**
- PC Member **REFSQ 2016**
- PC Member **SAC-RE 2016** 9th Edition of the Requirements Engineering Track

2015
- PC Member **ESEC/FSE** 2015
- PC Member **ICSE NIER Track 2015**, ICSE 2015
- PC 18th **MODELS 2015**
- Member of the **RE'15** Workshop Selection Committee

2014
- **SEAMS'14, RE'14**, **RE'14 Posters&Demos**, **MODELS 2014**, **ICSE NIER Track 2014**, Publicity co-Chair **MODELS 2014**, **VAMOS 2014**,**CIbSE 2014**

2013
- **SEAMS**'13, **MODELS**, **RE 2013: Posters&Demos, VaMOS**, 2013, **SBES** 27th Brazilian Symposium on Software Engineering (SBES), Brazil, 2013 – PC, **MoDRE** 3rd International Model-Driven Requirements Engineering Workshop 2013 – Organizer and PC

2012
- **ICSE** 2012, Zurich, Switzerland**, Students Volunteer Chair**, **MODELS**'12, **SEAMS**'2012, Posters and Demonstration **RE** 2012 –PC, **CIbSE** 2012, **SBES**

2011
- Posters and Demonstrations **RE 2011**, SBES 25th Brazilian Symposium on Software Engineering (SBES), **MoDRE**, **SEAMS** 2011

- **2010**
- SEAMS 2010 , WCSI 2010 International Workshop on Component and Service Interoperability at TOOLS 2010

- **2009**
- SOAR 2009 **Workshop Self-Organizing Architectures at WICSA/ECSA 09**, WASELF 2009 **2nd Workshop on Autonomic and SELF-adaptive Systems**, 2009, **SEAMS** 2009

2008
- **ASE** 2008, AQuSerM: **Advances in Quality of Service Management** with **EDOC** 2008 , WASELF-*: **Workshop on Autonomic and SELF-adaptive Systems**, Spain, 2008, REV 2008 **Third International Workshop on Requirements Engineering Visualization (REV'08)**, WCAT 2008 5th **Workshop on Coordination and Adaptation Techniques**, Italy, 2008, ARAMIS 2008 **Automated EngineeRing of Autonomic and run-tiMe evolvIng Systems,** Italy, **MDDAS** 2008 **The First IEEE International Workshop on Model-Driven Development of Autonomic Systems**, Turku, Finland, 2008IDEAS 2008 **11th Iberoamerican Workshop Requirements Engineering and Software Environments**, Brazil

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Teaching Experience

At Aston University, UK:

- Java Programming [~170- 220 students] module leader
- Object Oriented Programming Year 1 [~344 students], module leader
- Computational Intelligence [~20 students]
- Software Project Management [~170-220 students], module leader of different versions: undergraduate, master students and degree apprenticeships
- Supervisor of Final Year Projects, Group projects,
- Personal tutor and Final Year Tutor for Computing for Business (2014-17).
- PhD Tutor of the PhD students in CS at Aston (2017-)

At Lancaster University, UK:

- 2007, 2008, 2009 Guest Lectures on the use of UML and Models-driven Engineering, for undergraduate students and Master Student at Lancaster
- *Web Technologies Practical course*, Responsible for design of curriculum, overseeing lab activity, designing and grading exams (number of students between 50 and 100).
- *Discrete Math* course, I presented lectures and prepared associated material designing, and grading exams (between 50-100 students)

- *Concurrent Programming* course, lectures and prepared associated material.

At UCV, Venezuela:

- Courses in *Distributed Object Applications*, *Probability and Statistic and Object-Oriented Simulation*, Responsible for design of curriculum, presenting topics, overseeing lab activity, designing, administering and grading exams, and assigning final grades.

Courses/events on teaching undertaken or attended
I went through a two-year training as a Instructor Lecturer (Junior Lecturer) after been promoted to Assistant Lecturer (tenure position) at the UCV before joining Lancaster. This training program is very structured and rigorous and is part of the preparation of all Assistant Lecturers in any public university in Venezuela. It is a very competitive field.

During my training I was awarded the certificate for the following course:
- **Teaching techniques and learning strategies in the classroom**: The course teaches skills to design and deliver material in the classrooms and lab, how to open, develop, and close a lecture in an effective way. It was fully based in reflection and auto feedback received from videos of classes delivered that were filmed. The feedback was discussed by peers and tutor of the course (20 hours 5 sessions of 4 hours each plus the assessment).

- **Fundamentals of the Design of Courses and Elaboration of Programs**: This course was about how to design course programs and syllabus. The course teaches the skills of how to develop and program a course, including the description of the main goals of a course and the specific goals of every lecture/class to be delivered, and strategies of evaluations to be used. (60 hours in 15 sessions of 4 hours each. Assessment: The course needed me to design 2 new courses I was in charge of in those days.)

Languages Spanish (mother tongue), English (second language), French (good)

Other activities Cinema, Trekking, Photography, and Yoga

References
- **Prof *Gordon Blair*, Computing Department, Lancaster University, UK** (PhD Supervisor, co-author of several research papers, co-organizer of international workshops, co-organizer Dagstuhl Seminar)
- **Prof *Betty H.C. Cheng*, Computer Science and Engineering, Michigan State University, USA** (co-author of several papers, co-organizer of international workshops, co-organizer Dagstuhl Seminar)
- **Dr *Valérie Issarny*, Senior Research Scientist INRIA, Paris, France** (line manager and co-author of several papers)
- **Prof. *Anthony Finkelstein*, Professor UCL Faculty of Engineering Sciences, Government's Chief Scientific Adviser for National Security, President of City, University of London (2021)** (co-author of several papers)