

Lenka Pitonakova, PhD

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I am a scientist with an extensive software development experience. I specialise in agent-based modelling, artificial intelligence, distributed big data applications, robot programming and games and web development. I am strongly result-driven and able to balance rigour with creativity. I value efficiency, clean code and teamwork.

Technical And Transferable Skills

- **Object-oriented and functional programming** (C++, Objective-C, C#, C, Java, JavaScript, ActionScript, Python, PHP)
- **Database development** (PostgreSQL, MySQL) and **big data analysis**
- **Mobile app development (iOS / Android)**: iOS Sprite Kit, Google maps API, Bluetooth communication
- **Embedded and parallel software development**
- **Web development and graphic design**: PHP (general, CodeIgniter), HTML, CSS, JavaScript (jQuery, Ajax, REST, OAuth), Search engine optimisation, Responsive cross-browser applications, Adobe Creative Suite
- **Developer tools** (Unix command line, Bash scripts, git)
- **Agile software development**: Iterative coding, unit testing, communication with stakeholders
- Good working knowledge of **software design patterns** and **software carpentry** best practises
- Excellent code documentation and presentation skills
- Experience with project management, team leadership and developer recruitment

Work experience

Research Associate in Applied Mathematics and Computer Science Mar 2018 - to date
Bristol, UK

(Dep. of Computer Science, University of Bristol)

Developed a neural network for unsupervised learning and novelty detection on robots. Developed custom data analysis code in Python and C++. Continuously engaged with industry and academic stakeholders to update research plan and report progress. Supervised post-graduate projects and mentored students in software development.

Research Associate Oct 2017 - Feb 2018
Bristol, UK

(Bristol Robotics Laboratory)
Designed and developed a set of C++ plugins for the distributed V-REP simulation environment that facilitated research and data collection within the nuclear robotics domain at three partner universities.

Doctoral Prize Research Fellow Mar 2017 - Mar 2018
 (Bristol Robotics Laboratory and Dep. of Electronics and Computer Science, University of Southampton) Bristol, UK
 Independent research project funded by the EPSRC. Developed foraging algorithms and data collection methods for a distributed e-puck robot system using C++, ROS and Bash. Supervised post-graduate projects and mentored students in software development.

Data scientist, software developer Oct 2015 - Feb 2016
 (Flowminder Foundation) Southampton, UK
 Worked on a distributed Python application that processed mobile phone data in order to aid disaster response of the United Nations. Negotiated data collection and storage practises with a second party mobile network provider. Trained an international team of data scientists in object-oriented software development and programming practices.

Software developer: Junior to Mid-level Sep 2007 - Mar 2017
 (Edelman Digital, Hurst MailAgent and self-employed) Throughout the UK
 Worked on individual and international team projects within industry and academia, including on data processing and user monitoring applications, games, iOS and Android applications, web sites and web services. Assumed roles of a Software Developer, Project Manager, Producer and Quality Assurance Lead.

Awards and Distinctions

EPSRC Impact Accelerator Early Career Kick Starter Award (Development of Sketch BDRML 0.6)	£5,000	Dec 2018
University of Bristol Pump-Priming Grant (Development of Sketch BDRML 0.5)	£4,500	Jun 2018
EPSRC Doctoral Prize Fellowship	£35,000	Mar 2016
University of Southampton Pump-Priming Grant (Development of The Hive Mind game)	£500	Feb 2015
EPSRC Doctoral Training Centre PhD Grant	£66,000	Nov 2011
General Motors Final Year Scholarship	£1,000	June 2008

Education

PhD in Simulation of Complex Systems Sep 2012 - Jan 2017
 (University of Southampton) Southampton, UK

MSc in Evolutionary and Adaptive Systems (Distinction) Oct 2009 - Sep 2011
 (University of Sussex) Brighton, UK

BSc in Computer Games Development (First class) Sep 2006 - Jul 2009
 (University of Bedfordshire) Luton, UK

Selected Software Projects (more on <http://lenkaspacenet>)

Sketch BDRML Jun 2018 - to date

Roles: Producer, Project manager

A desktop Java-based editor for the BDRML language

<http://swarmdesign.lenkaspacenet/sbdrml/>

pyCreeper Nov 2017 - to date

Roles: Developer

An open-source Python library for data processing and plotting

<http://pycreeper.lenkaspacenet>

CabMyRide iOS and Android app Jan 2017 - Aug 2017

Roles: Project manager, iOS Developer

An Uber-style taxi app

https://cabmyride.com/the_app

The Hive Mind Jan 2015 - Dec 2016

Roles: Producer, Developer

An educational Flash game about collective construction with robots

<http://thehivemind.lenkaspacenet/>

Motosu Jun 2014 - Feb 2017

Roles: Project manager, PHP developer

A content management and a web hosting system

<http://motosu.co.uk/>

Stardust Colonies Mar 2013 - Jan 2015

Roles: Producer, Developer

A strategy game with its own C++ game engine and game AI based on fuzzy logic

<http://stardustcolonies.lenkaspacenet>

Creeper Feb 2013 - Sep 2013

Roles: Developer

An open-source Java framework for agent-based simulations

<http://lenkaspacenet/code/libraries/creeper>

Research and Teaching

- Internationally recognised journal and conference papers, including publications in **Frontiers, Swarm Intelligence and Adaptive Behaviour** (<http://lenkaspacenet/info/publications>)
- **Teaching and project supervision** experience involving students at PhD, Masters and Bachelor's levels
- Participated in a number of **outreach activities**, including organising an international conference on complex systems, as well as various public science events and talks

Legal status in Canada: Expected to obtain Permanent Residency in March 2019