PHAN NGUYEN

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PERSONAL STATEMENT

I am a PhD student in the School of Computer Science at the University of Birmingham with an interest in applying mathematical methods to understand how probabilistic model-based optimisation algorithms work. I have a passion for problem-solving and technology and wish to work within an industry that helps to shape every aspect of our lives. I have worked hard over many years to improve my confidence, communication and team-working skills, helping me to engage effectively with my peers.

EDUCATION

University of Birmingham, Birmingham, UK　　　　　　　　　*January 2017 - Expected 2020*
Doctor of Philosophy in Computer Science

University of Sheffield, Sheffield, UK　　　　　　　　　*September 2013 - July 2016*
Bachelor of Engineering in Software Engineering　　　　　　　　　*First Class with Honours*

University of Sheffield International College, Sheffield, UK　　　*January 2013 - August 2013*
Foundation Year in Natural Sciences　　　　　　　　　*Distinction with 86% overall*

PROJECTS

On the Time Complexity of Probabilistic Model-Based Algorithms　　　January 2017 - Present
Research Project, University of Birmingham　　　　　　　　　*Birmingham, UK*

· Probabilistic model-based algorithms are a class of algorithms which optimise an objective function by building and sampling from probabilistic models such as Bayesian network and Random Markov Field, widely applied to capture the underlying structure and learn the correlation between decision variables of the addressed problems.
· The ultimate aim of this project is to understand *when* to use these algorithms, *why* they work and *how* to tune the algorithm's parameters to efficiently optimise the objective function. Based on the obtained intuition, we also aim to apply techniques from graphical model learning to improve the efficiency of these algorithms, especially in the model selection and model building stages.
· Main topics covered: Probability Theory, Computational Complexity Theory, Graphical Model Learning, Sampling, Optimisation, Bio-inspired Meta-heuristics, Graph Theory, Search Heuristics.

Job Request System　　　　　　　　　September 2014 - May 2015
Industrial Project, Department of Mechanical Engineering, University of Sheffield　　　*Sheffield, UK*

· As part of a team of five, we developed a system that helps staffs in the Department to manage jobs. Each user can advertise jobs to others or accept a new job. Managers can monitor all team members, follow the progress of any job and remind of urgent jobs. In the end, a finished job will be closed, and final reports must be submitted from each team member. The system is currently in use in the Department.
· Using Ruby-on-rails Framework, Bootstrap, Javascript, LESS, SQLite, MVC Architecture.

Dental Practice Customer System　　　　　　　　　September 2014 - January 2015
Class Project, University of Sheffield　　　　　　　　　*Sheffield, UK*

· As part of a team of four, we built a system for a dental practice. The system allows receptionists to register patients, arrange appointments. It also allows doctors to enter prescriptions, view check-up history as well as allows patients to book appointments and pay their bills.
· Using Java, MySQL, JDBC, JavaFX.

TECHNICAL SKILLS

Programming Languages	Python, R, Java, C
Markup Languages	HTML5/CSS3, Latex
Operating Systems	Window, Linus, Mac OS, HPC
Version Control	Git

WORK EXPERIENCE

SOTI Inc. <div align="right">March 2019 - April 2019</div>
Consultant <div align="right">*Birmingham, UK*</div>

· As part of a team of five PGR students across multi-disciplines, we have been developing a strategy for facial recognition software for authentication to help SOTI Inc. to manage millions of mobile devices for enterprise customers around the world.

School of Computer Science, University of Birmingham <div align="right">January 2017 - Present</div>
Teaching Associate <div align="right">*Birmingham, UK*</div>

· I assist with the teaching of computer science modules, specifically software engineering, neural computation, introduction to neural networks, machine learning, software workshop and team projects.
· For neural computation and introduction to neural networks, which cover gradient-based optimisation methods, back propagation, feed-forward networks, RNN, convnets, GAN, dropout, data augmentation, boosting, I helped produce a comprehensive set of exercises to further the students' understanding of what being taught in lectures.
· For software workshop and team projects, I helped marking student's work, mostly in Java programming, and supervising 6-7 teams each consisting of 6 students to develop a system (2D/3D games, messenger, etc) for their final project during the whole semester.

University of Sheffield International College <div align="right">September 2014 - June 2016</div>
Mathematics Teaching Assistant <div align="right">*Sheffield, UK*</div>

HONORS AND AWARDS

(2016) Vice-Chancellor's Scholarship for Research Excellence (International), *University of Nottingham.*
(2016) The Douglas Lewin Memorial Prize, *University of Sheffield.*
(2015) The British Computer Society Eliot Chiat Prize, *British Computer Society.*
(2011) Honourable Mention in 12th Asian Physics Olympiad, *Israeli Ministry of Education.*

PUBLICATIONS AND MANUSCRIPTS

(2019) Towards Understanding Runtime of the Univariate Marginal Distribution Algorithm on LeadingOnes.
Accepted for the *Genetic and Evolutionary Computation Conference* (GECCO '19), ACM Press (to appear).

(2019) Memetic Algorithms Outperform Evolutionary Algorithms in Multimodal Optimisation.
Under review for *Artificial Intelligence Journal*, Elsevier.

(2019) On the time complexity of the population-based incremental learning via DKW inequality.
Under review for the *Evolutionary Computation Journal*, MIT Press.

(2018) Level-Based Analysis of the Population-Based Incremental Learning Algorithm.
Published in the *Parallel Problem Solving from Nature Conference* (PPSN 2018), Springer.

(2018) Memetic Algorithms Beat Evolutionary Algorithms on Class of Hurdle Problems.
Published in the *Genetic and Evolutionary Computation Conference* (GECCO '18), ACM Press.

(2018) Level-Based Analysis of the Univariate Marginal Distribution Algorithm.
Published in the *Algorithmica Journal*, Springer.

(2017) Improved Runtime Bounds for the Univariate Marginal Distribution Algorithm via Anti-Concentration.
Published in the *Genetic and Evolutionary Computation Conference* (GECCO '17), ACM Press.

REFERENCES

References are available upon request.