Kexin Gu Baugh

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Education

Imperial College London – PhD Computing 2021 - 2025

- Research area: neuro-symbolic AI – combining classical logic-based learning with neural networks
- Supervised by Alessandra Russo and Luke Dickens. Member of SPIKE research group.

Imperial College London – MEng Computing (AI & ML) First Class Honours 2017 - 2021

- Thesis: HACR: Hybrid Architecture for Concept Reasoning- 86.00%

Publications

Neural DNF-MT: A Neuro-symbolic Approach for Learning Interpretable and Editable Policies
Kexin Gu Baugh, Luke Dickens, Alessandra Russo, in Proceedings of the 24th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2025) - arxiv preprint, code

Neuro-symbolic Rule Learning in Real-world Classification Tasks
Kexin Gu Baugh, Nuri Cingillioglu, Alessandra Russo, in Proceedings of the AAAI 2023 Spring Symposium on Challenges Requiring the Combination of Machine Learning and Knowledge Engineering (AAAI-MAKE 2023) - full paper, code

Experience

Teaching

Data Structure and Algorithms 2023/2024, 2024/2025
Master coures, Imperial College Business School

Introduction to Prolog 2021/2022, 2022/2023
Undergraduate course, Imperial College London, Department of Computing

Logic 2021/2022
Undergraduate course, Imperial College London, Department of Computing

National Institute of Informatics (Japan) - *Research Internship* Jan - May 2024
Joined the Inoue Lab and supervised by Prof. Katsumi Inoue. Worked on the project of neuro-symbolic learning in Boolean Networks.

Cisco ThousandEyes - *Software Engineer Intern* April - September 2020
Joined the Endpoint Agent team and worked with the backend team on a new product. Experienced professional software development and full DevOps cycle.

Cisco ThousandEyes - *Software Engineer Intern* July - September 2019
Worked for both the frontend and backend teams to build the webapp. Gained experience in using Spring Boot and Vue.

Facebook Hack-a-Project - *Participant* February - March 2019
A five week programme for developing coding skills and experiencing the full development cycle with the support of a Facebook mentor.

Software Engineering Projects

Tamagucci – Python, Javascript Group project, Feb 2020

- A gamified pet drone that interacts and plays with you
- Won the 'Best Entertainment Hack' prize in IC Hack 20
- Technology: speech-to-text, natural language processing, drone control
- Links: *Project DevPost*, *GitHub*, *YouTube demo*

Drone Playground – Javascript, Python Group project, Oct - Dec 2019

- A teaching tool targeting primary school students to teach them programming by controlling a drone
- Used in a primary school by the outreach team of Department of Computing of Imperial College, with great feedback from the students
- Technology: domain-specific language, drone control
- Links: *GitHub*, *YouTube demo*

TEA - Tutorial Educational Aid – JavaScript, Python Group project, May - Jun 2019

- A web application that provides real-time interactions between students and teaching assistants
- Links: *GitLab*

SpeedBoards – Kotlin Group project, Feb 2019

- Android keyboards that reduce the number of key presses during typing
- Won the runner-up 'Best Native Mobile App' prize in IC Hack 19
- Links: *Project DevPost*

Guitar Amateur – C Group project, May - Jun 2018

- A rhythm game inspired by Guitar Hero series
- Reversed engineered the Guitar Hero songs files to support all songs from the original game
- Links: *GitHub*

Skills

Programming Languages: Python, Answer Set Programming, Prolog, Kotlin, Java, Haskell, C

Machine Learning: PyTorch, Scikit-learn, Hugging Face

Language: English (native) and Mandarin Chinese (native)

Interests & Activities

Advent of Code

- Casual participant in the yearly Advent of Code challenge since 2020
- *Prolog solutions (2020 - Now)*, *Python solutions (2022 - Now)*