

Duke Nguyen

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SUMMARY **PhD student** in natural language processing (NLP) at the [University of New South Wales](#), researching on NLP for English dialects.

RESEARCH Chan, Fai Leui, **Duke Nguyen**, and Aditya Joshi. 2014. "Is Hate Lost in Translation?": Evaluation of Multilingual LGBTQIA+ Hate Speech Detection. [arXiv preprint arXiv:2410.11230](#).

Duke Nguyen, Aditya Joshi, and Flora Salim. 2024. Spectraformer: A Unified Random Feature Framework for Transformer. [arXiv preprint arXiv:2405.15310v3](#)

Duke Nguyen, Khaing Myat Noe Naing, and Aditya Joshi. 2023. Stacking the Odds: Transformer-Based Ensemble for AI-Generated Text Detection. In [Proceedings of the 21st Annual Workshop of the Australasian Language Technology Association](#), Melbourne, Australia. Association for Computational Linguistics.

EXPERIENCE *Casual Academic* 2024 - Now
[UNSW](#), Sydney NSW

Invigilated exams; led tutorials and graded assignments for the following courses

- [COMP9444](#), covering neural network and its applications (e.g., CNN, LSTM, transformer, deep reinforcement learning, auto-encoders, adversarial learning).
- [COMP9414](#), covering autonomous agents, optimisation, knowledge representation, reinforcement learning.
- [COMP9417](#), covering linear models, tree learning (kNN), ensemble learning, unsupervised learning, and neural networks along with rigorous mathematical foundations.

Research Assistant 2023 - 2024
[UNSW](#), Sydney NSW

- Executed complex research tasks as part of a project funded by **Google's** exploreCSR grant. Tasks include data collection, analysis, reporting, and applying machine learning models, NLP techniques, large language models.

JavaScript Developer 2021 - 2022
[QSSstudio](#), Sydney NSW

- Contributed to the development of the [ServoTrack](#) API, including authentication/authorization for an IoT cluster, serverless and Lambda application deployments, and CI/CD (Bitbucket, Docker).

Software Engineer 2020 - 2021
[PlaceOS](#), Sydney NSW

- Engineered a cutting-edge e-commerce platform for IoT technologies and services. Architected and managed a robust CI/CD pipeline utilizing Travis, GitLab, and GitHub Actions, and Docker; maintained critical databases.

	<p><i>Software Engineer Intern</i> 2020 - 2020 PlaceOS, Sydney NSW</p> <ul style="list-style-type: none"> Collaborated on the development of a financial micro-service; standardized technical documentation using IEEE standards.
EDUCATION	<p><i>Doctor of Philosophy (Computer Science and Engineering)</i> 2028 University of New South Wales, Sydney NSW</p> <ul style="list-style-type: none"> University Postgraduate Award (2024-2028) <p><i>Master of Information Technology (Artificial Intelligence), Excellence Award</i> 2024 University of New South Wales, Sydney NSW</p> <ul style="list-style-type: none"> <i>Thesis:</i> Spectraformer, a unified framework for fast Transformers (via RF), helps discover novel SOTA fast transformer models. <i>Research Project: Fake News Detection.</i> Enhances current detection techniques, helping combating against misinformation, by integrating BERT and linguistic features (selected via ANOVA and Pearson correlation) with a novel similarity measure against topically aligned articles, as validated by Google News' PageRank. <i>Research Project: Authorship Identification.</i> Won the Innovative Applications of AI Award at Berrijam Jam April 2023 with <i>Team Spirit</i>. Tackled authorship identification on the Standardized Project Gutenberg Corpus, achieving significant results with a 95.12% accuracy using a SDAE with SVM, surpassing the performance of finely-tuned BERT models. <p><i>Diploma of Information and Technology, Distinction</i> 2020 Academy of Information Technology, Sydney NSW</p> <p><i>Bachelor of Arts, Distinction</i> 2019 University of Wollongong, Wollongong NSW</p> <ul style="list-style-type: none"> Faculty Merit Scholarship & Undergraduate Excellence Scholarship (2016-2019)
WORKSHOPS	<p><i>Speaker</i></p> <ul style="list-style-type: none"> Crystal 1.0 Conference - Macros in Practice <p><i>Membership</i></p> <ul style="list-style-type: none"> Collaborative Human-Centric AI Systems (CRUISE) Lab HCC - ML - NLP Reading Group (UNSW)
AWARDS	<p>IBM Quantum Certificate of Quantum Excellence in Quantum Machine Learning IBM Quantum Advanced Award (Fall 2021, Africa 2021)</p>
LIBRARIES	<p><i>Data structure</i> - Merkle Tree <i>Standards</i> - JSON Web Key Set, Code Documentation Generator <i>Interface</i> - etcd Client, PostgreSQL Client, HTTP Router, Microsoft Graph Client</p>
SKILLS	<p><i>Natural Languages:</i> English, Japanese, Vietnamese <i>Formal Languages:</i> Python, SQL, C, TypeScript, JavaScript, Crystal, Ruby, Latex <i>Libraries:</i> Pytorch, Sklearn, Pandas, Numpy, Matplotlib, React.js <i>Others:</i> CI/CD, Docker, Cloud (AWS/ Azure), Statistics, Research, Documentation</p>