Qinyi Li

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PROFESSIONAL SUMMARY

Proactive fourth-year Master of Informatics student at the University of Edinburgh. Experienced in AI research through my fourth-year dissertation, focused on efficient deep learning in speech under resource constraints. Demonstrated ability to survey new fields and critically analyse research, with strong teamwork and communications skills from internships at Amazon and Thought Machine. Seeking a research internship to further develop expertise in machine learning and promote the progress of cutting-edge research.

EDUCATION

MInf Informatics (Integrated Masters) **University of Edinburgh** **Sep 2020 — Expected Jul 2025**

- ***Current Grades: Expected First Class Honours, average mark 72/100***
- ***Key Courses***: Foundations of Data Science, Machine Learning, Computer Security, Fundamentals of Optimization, Speech Processing, Automatic Speech Recognition, Foundations of Natural Language Processing, Honours Analysis, Honours Algebra, Fundamentals of Operational Research, Integer and Combinatorial Optimization.
- ***pwnED3 cybersecurity capture-the-flag competition (2022)***: Played a pivotal role in leading the team, securing 13th place overall. Made significant contributions in the steganography and reverse engineering challenges.

RESEARCH EXPERIENCE

Training large neural networks in speech under resource constraints **University of Edinburgh** **Jun 2023 – Apr 2024**

- ***Awarded Outstanding Undergraduate Project (marked 80/100). Marker feedback indicated that the dissertation is very close to publishing quality.***
- Addressed the complexities and resource constraints in training and executing speech processing systems.
- Used FractalNet to enhance training efficiency and adaptability to varying resource conditions.
- Experiments demonstrated significant training time reductions across all models with minimal performance impact, while enabling adaptation to diverse neural network types (LSTMs and Transformers) and resource availabilities.
- All code for this project was implemented in PyTorch.

WORK EXPERIENCE

Tutor for Machine Learning **University of Edinburgh** **Jan 2024 – Mar 2024**

- Delivered diverse machine learning concepts to students, including optimization, logistic regression, and SVD.
- Conducted tutorials utilising PyTorch to implement various machine learning algorithms.

Software Development Engineer Intern **Amazon London** **Jun 2023 – Sep 2023**

- Engineered a dynamic code analysis tool for optimizing Prime Video's service configurations, enhancing system efficiency and reliability.
- Collaborated cross-functionally to integrate feedback, refining both project scope and technical specifications.

Driverless Localisation and Mapping Team Member **Edinburgh University Formula Student** **Oct 2022 – Sep 2023**

- Developed algorithms for autonomous vehicle navigation and mapping, contributing to team's top-tier performance at the international Formula Student Competition in July 2023.
- Enhanced team capabilities by implementing robust testing and documentation practices.

Back-End Software Engineer Intern **Thought Machine** **Jul 2022 – Sep 2022**

- Designed a Kubernetes job for detecting duplicate messages across Kafka topics, significantly improving data processing accuracy and efficiency.

SKILLS

Programming Languages: Python (PyTorch, scikit-learn, Matplotlib/Seaborn, etc.) | Java | Go | C++ | Haskell
Frameworks/Tools: Command Line Interface | AWS CDK & AWS Lambda | ROS2 | Apache Kafka | Kubernetes
Languages: English (Fluent) | Chinese (Native) | French (Intermediate, DELF A2)

李沁一

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个人总结

- 爱丁堡大学信息学本硕连读项目本科四年级在读学生
- **本科四年级毕业论文荣获优秀本科项目奖。**论文阅卷反馈表明论文质量已非常接近出版水平。
- 通过两次暑期实习经历，不仅锻炼了专业能力，而且提高了团队协作能力和沟通技巧，赢得了同事和上级的广泛认可
- 现正积极寻求一份机器学习领域的科研实习，以期在这一专业领域内进一步提升专业技能，推动前沿研究的进展

教育背景

爱丁堡大学 **信息学 | 本硕连读项目** **2020.09 — 2025.07**

- **目前成绩：一等学位，均分 72/100**
- **核心课程：** 数据科学、机器学习、优化理论、语音处理、自动语音识别、自然语言处理、计算机安全、数学分析、数学代数、运筹学、整数与组合优化。
- **参与 pwnED3 网络安全 CTF 夺旗赛（2022）：**所在小组取得了第 13 名的成绩。我在领导团队中发挥了关键性作用，并在隐写术和逆向工程任务中作出了显著贡献。

科研经历

爱丁堡大学本科毕业论文 **资源约束下大型神经网络在语音处理中的自监督训练** **2023.06 — 2024.04**

- **论文荣获优秀本科项目奖（分数 80/100）。论文阅卷反馈表明论文质量已非常接近出版水平。**
- 深入研究了训练和执行语音处理系统时面临的复杂性和资源约束问题，采用 FractalNet 来提高训练效率和适应不同资源条件的能力。
- 实验表明，该方法在显著缩短训练时间的同时，对性能的影响极小，从而充分证明了其高效性和实用性。同时，此方法还展现了出色的普适性，适用于不同类型的神经网络（LSTM 和 Transformer 模型）和多样化的资源可用性场景。
- 本项目所有代码均使用 PyTorch 实现。

工作经历

爱丁堡大学 **机器学习课程助教** **2024.01 — 2024.05**

- 向学生们讲解了多种机器学习概念，包括优化算法、逻辑回归和奇异值分解（SVD）
- 辅导学生们如何利用 PyTorch 实现各种机器学习算法

Amazon（伦敦） **软件开发实习生** **2023.06 — 2023.09**

- 开发了一款用于优化 Prime Video 的服务配置的动态代码分析工具，提升了系统的效率和可靠性。
- 与 Prime Video 团队内多个小组紧密合作，整合多方反馈，并对项目范围和技术设计进行了细化和完善。

爱丁堡大学方程式赛车社团 **无人驾驶定位与地图构建团队成员** **2022.10 — 2023.09**

- 协助开发了自动驾驶车辆的导航和地图绘制算法，为团队在 2023 年 7 月的国际 Formula Student 竞赛中取得顶尖成绩做出了贡献。
- 通过实施稳健的测试和文档记录实践，提升了团队的整体能力。

Thought Machine（伦敦） **后端软件工程实习生** **2022.07 — 2022.09**

- 设计了一个基于 Kubernetes 的 Job，专门用于精准检测 Kafka Topic 中的重复消息，提高了数据处理的准确性和效率。

技术能力

编程语言：Python（PyTorch、scikit-learn、Matplotlib/Seaborn 等） | Java | Go | C++ | Haskell

框架及工具：命令行界面 | AWS CDK 与 AWS Lambda | ROS2 | Apache Kafka | Kubernetes

语言：英语 | 中文 | 法语（A2 水平）