O.I. EMMANUEL

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Google Scholar: https://scholar.google.com/citations?user=Uss8XY0AAAAJ

RESEARCH INTEREST

Machine Learning and Deep Learning
- Security and Privacy
- Deep learning algorithms, Social Media Mining, Health informatics
- Graphs and Graph Neural Networks

EDUCATION

2020-2024
(Expected, February)

Doctor of Philosophy (Computer Science), Leibniz University, Hannover, Germany

- Research emphases: Privacy-preserving Machine Learning, Graph Neural Networks, Health informatics
- **Supervisors:** Prof. Wolfgang Nejdl and Asst. Prof. Megha Khosla

2017-2020   **Master of Philosophy (Systems Engineering)**, The Chinese University of Hong Kong

- Research emphases: Social Media Mining, Text Mining, Natural Language Processing (NLP), Helpfulness prediction for product reviews, Machine Learning
- **Thesis:** All reviews are not equal: helpfulness prediction for online product reviews
- **Supervisors:** Prof. Lam Wai and Prof. C.H Cheng

2014-2015   **Master of Science (Advanced Information Systems)**, Hong Kong Baptist University

- Study emphases: Information systems development, Information security, and Data warehouse
- Study tour: South-China University of Technology (SCUT), *December 2014*
- **Academic Mentor:** Prof. LEUNG, Yiu Ming
- Final Grade: 3.83 / 4.0

2008-2012   **Bachelor of Science (Computer Science)**, Crawford University

- Study emphases: Computer programming, Data Mining, Statistics, Algorithms, and Databases
- **Thesis:** Simulation of an aircraft arrival system: a case study of Murtala Muhammed international airport, Nigeria
- Final Grade: 4.44 / 5.0

TEACHING EXPERIENCES

Leibniz University, Hannover, Germany

Machine learning for Graph Seminar	Tutor	**Summer**	**2022**
Deep Learning	TA	**Summer**	**2021**
Machine Learning for Graphs	TA	**Winter**	**2021**
Probabilistic Machine Learning	TA	**Winter**	**2020**

The Chinese University of Hong Kong, Hong Kong

Service Management	TA	**Fall**	**2017**
Technology, Society & Engineering Practice	TA	**Spring**	**2018**
Service Management	TA	**Fall**	**2018**

SELECTED PUBLICATIONS

Conference

- **Iyiola E. Olatunji**, Anmar Hizber, Oliver Sihlovec and Megha Khosla. "Does Black-box Attribute Inference Attack on Graph Neural Networks Constitute a Privacy Risk?", ArXiv, **2023**
- **Iyiola E. Olatunji**, Mandeep Rathee, Thorben Funke and Megha Khosla. "Private Graph Extraction via Feature Explanations", Privacy Enhancing Technology Symposium (PETS), **2023**
- **Iyiola E. Olatunji**, Thorben Funke and Megha Khosla. "Releasing Graph Neural Networks with Differential Privacy Guarantees", Transactions on Machine Learning Research (TMLR), **2023**
- **Iyiola E. Olatunji**, Wolfgang Nejdl and Megha Khosla. "Membership Inference Attack on Graph Neural Networks", IEEE International Conference on Trust, Privacy, and Security in Intelligent Systems and Applications (TPS-ISA), **Best student paper award**, **2021**
- Jens Rauch, **Iyiola E. Olatunji** and Megha Khosla. "Achieving Differential Privacy for K-nearest Neighbors-based Outlier Detection by Data Partitioning", ArXiv, **2021**
- **Iyiola E. Olatunji**, Xin Li and Wai Lam. "Context-aware Helpfulness Prediction for Online Product Reviews", The 15th Asia Information Retrieval Societies Conference (AIRS), **2019**
- **Iyiola E. Olatunji**, Wing Kuen, Eric SEE-TO and Savvas Papagiannidis. "Longitudinal Analysis of Economic Clusters: A Novel Methodology and Application of UK Regions", 19th International Conference on Electronic Business (ICEB), **2019**
- **Iyiola E. Olatunji** and Chun-Hung Cheng. "Dynamic Threshold for Resource Tracking in Observed Scenes", IEEE Conference on Information, Intelligence, Systems and Application (IISA), **2018**
- **Iyiola E. Olatunji**. "Human Activity Recognition for Mobile Robot". 3rd Annual International Conference on Information System and Artificial Intelligence (ISAI), **2018**
- Lihao Liu, Qi Dou, Hao Chen, **Iyiola E. Olatunji**, Jing Qin and Pheng-Ann Heng. "MTMR-net: Multi-Task Deep Learning with Margin Ranking Loss for Lung Nodule Analysis" Deep learning in Medical Imaging (DLMAI), MICCAI, **2018**

Journal

- **Iyiola E. Olatunji**, Jens Rauch, Matthias Katzensteiner and Megha Khosla. "A review of anonymization for healthcare data", Big Data, **2022**
- Chun-Hung Cheng and **Iyiola E. Olatunji**. "Harnessing Constrained Resources in Service Industries via Video Analytics". Journal of Archives of Industrial Engineering, **2018**

Book Chapter

- **Iyiola E. Olatunji** and Chun-Hung Cheng. "Video Analytics for Visual Surveillance and Application: An Overview and Survey". Machine Learning Paradigms – Advances in Data Analytics – 2, **2019**

Invited Talks

- **Topic: Navigating the Privacy Maze: Examining the Dark Side of Model Explanations**
  Graduate Seminar, University of Göttingen, Germany   **2023**
- **Topic: Navigating the Privacy Maze: Examining the Dark Side of Model Explanations**
  Responsible AI Seminar, CISPA Hannover, Germany   **2023**
- **Topic: Privacy risks: From anonymization to machine learning**
  Workshop on Privacy Preserving Analysis, Zukunftslabor Gesundheit, Germany **2021**
  https://zdin.de/uploads/Workshop_PrivacyPreservingAnalysis.pdf
- **Topic: Conversational AI and NLP Trend**
  Tsinghua University Science Park (TusPark), Honk Kong   **2019**
  https://www.tusstar.com/index.php?app=web&m=Index&a=detail&id=7221

SCHOLARSHIPS AND AWARDS

The Chinese University of Hong Kong

- Postgraduate Studentship Scholarship
- August 2017 – December 2019

Hong Kong Baptist University

- High Distinction Scholarship, Winter term 2015 (2 out of 200)
- Distinction Scholarship, Fall term 2014 (6 out of 200)

National Awards
- Corps Liaison Officer, 2013 (1 out of 1,000)
- Certificate of National Service

TECHNICAL SKILLS

Programming Languages: Python, PHP, HTML5, CSS3, JavaScript

Operating Systems: Linux (CentOs, Ubuntu), Windows (XP, Vista, 7, 8, 10, 11), MacOS

Databases and Tools: PyTorch, PyG, MySQL, WordPress

Others: SLDC, Agile SD, API development

LANGUAGES: English, Chinese (Elementary), German (A1)

CAREER HISTORY

Project: Future Health Lab (Zukunftslabor Gesundheit)

- Integration of privacy-preserving data analysis in healthcare
- Project URL: https://www.zdin.de/zukunftslabore/gesundheit

Project: Auteur Watches

- Classic Multilanguage watch Webshop with DEAR API integration
- Project URL: https://auteur-watches.com

Project: OptIn platforms

- Mobile app push notification and analytics system
- Front-end, backend, and API development, including mobile SDK
- In-house development. Launched in July 2017

Project: Eyebb

- Completed a 2-year contract programming language conversion from JAVA to PHP in 6 months, including the incorporation of new features
- API design, development, and third-party API integration
- Frontend and backend portal development
- Project URL http://eyebb.com (In the news: http://hk.on.cc/hk/bkn/cnt/news/20151004/bkn-20151004100732366-1004_00822_001.html)

Project: eNotice

- API design, development, and third-party API integration
- Developed backend portal system architecture
- Project URL: http://enoticesapp.com

March 2020– To date   *Leibniz University Hannover*   *Germany*
Position: Research Scientist
Project: Privacy-Preserving Machine Learning

- Differential Privacy and application on graph neural networks
- Privacy and application of AI in healthcare
- Attacks and Defenses against machine learning models

May 2016– July 2017   ***Hong Kong Baptist University***   *Hong Kong*
Position: Research Associate
Project: Privacy-Preserving Large-Scale Indoor Location Tracking using Wearable Devices

- Design of an efficient location-aware algorithm for indoor tracking
- Development of Restful APIs and ad-hoc programming as required
- Design of privacy-preserving algorithm for indoor location tracking
- Development of indoor location estimation algorithms using Wi-Fi technology
- **Supervisor:** Jianliang Xu

November 2015– May 2016   ***The Hong Kong Polytechnic University***   *Hong Kong*
Position: Research Associate
Project: Incognito browsing of spatial-temporal data using computationally secure information retrieval

- Developed Oblivious RAM (ORAM) algorithm, Homomorphic encryption scheme, and implementation of secure multiparty computation for secure information retrieval
- Data collection, analysis, and simulation
- Diagnosed and solved problems related to the research project
- **Supervisor:** Haibo Hu

December 2013 – August 2014   ***Lorion Ventures Limited***   *Nigeria*
Position: Branch Operations Manager
- Controlled organization's resources and expenditures
- Improved quality of service, and I ensured the smooth running of the organization
- Protected the interest of workers and acted as an intermediary between collaborating agencies
- Increased revenue by 40% in 3 months by introducing business intelligence

November 2012 – October 2013   ***National Youth Service Corps***   *Nigeria*
Position: Volunteer Service as Computer Instructor

- Taught Computer studies to different cadres of people and at seminars.
- Ensured a high level of discipline amongst corps members.
- Held talk shows in schools enlightening students on the pervasiveness of computing.

OTHER QUALIFICATION

- Took a certification course in project management, and I hold a professional membership with International Project Management Professionals as a Certified Project Manager.

HOBBIES/INTEREST

- Research, imparting knowledge, meeting people, reading, and football

OTHER RELEVANT SKILLS

- Project Management, Interpersonal relations, Decision-making initiative, Problem-solving, and Agile-oriented.

ACADEMIC SERVICE
- Reviewer of conferences and journals: TIFS, CCS, TNNLS, Briefings in Bioinformatics

EXTRACURRICULAR ACTIVITIES:
- CUHK International festival model representing Nigeria
- Participated in International Student Day at HK Baptist University, representing Nigeria