

HONG YUNG (JOEY) YIP

Ph.D. Student in Computer Science
Knowledge Graph, Machine Learning, NLP, Blockchain

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OBJECTIVES & RESEARCH INTERESTS

Primarily driven by the notion of intertwining machine/ deep learning and knowledge graph (incl. knowledge creation and semantic web) with natural language understanding (NLU) in Conversational AI and Big & IoT Data analytics for health and social good.

EDUCATION BACKGROUND

Ph.D. in Computer Science and Engineering (2017 – Present)

Wright State University, Dayton, Ohio, USA

CURRENT CGPA: 4.0/4.0 (Thesis Advisor – Prof. Amit Sheth)

Selected Graduate Courses: Soft Computing, Deep Learning, Network Science, Information Retrieval, Statistical Analysis, Distributed & Cloud Computing, Semantic-Cognitive-Perceptual Computing, Advanced Semantic Web, Web 3.0, Advanced Algorithm Design & Analysis, Advanced Programming Languages, Cryptography & Data Security, Communication in Science

Master of Bioinformatics (2015-2016)

University of Malaya, Malaysia

CGPA AS OF FINAL YEAR: 3.94/4.00 (Top 1 by cohort)

Thesis: “[Electronic Health Record Integration](#)”

Bachelor of Biomedical Science (Hons), minoring in Pharmaceutical Science (2011-2015)

Taylor's University Lakeside Campus, Malaysia

CGPA AS OF FINAL YEAR: 3.80/4.00 (First Class Honours Degree)

RELEVANT RESEARCH & TEACHING EXPERIENCES

2018-Present

Graduate Teaching Assistant

Wright State University, Dayton, Ohio

Teaching assistant for the Course **CS1160: Introduction to Computer Programming.**

2017-Present

Graduate Research Assistant (Ph.D.)

Kno.e.sis Center, Wright State University, Dayton, Ohio

Working on several NIH-funded projects focusing on researching socially intelligent health conversational agent as a technological vehicle to understand, abstract, learn, adapt, and engage users in a personalized and contextualized manner.

In particular, I leverage on (i) deep domain knowledge representation from health ontologies and Personalized Individual Health Knowledge Graph synthesized from social media, clinical records, and IoT devices as knowledge sources; and (ii) machine learning models with NLU techniques for (a) intent and context understanding, (b) sentiment detection, (c) common sense reasoning, and (d) response generation.

- NIH-Funded: [kHealth: Semantic Multisensory Mobile Approach to Personalized Asthma Care](#)
- NIH-Funded: [Modeling Social Behavior for Healthcare Utilization in Depression](#)

Visit www.joeyyip.com for more projects on **Conversational AI/ Bots, Knowledge Graph, Machine Learning, Blockchain, and Bioinformatics.**

Keywords: Machine Learning, Knowledge Representation, Social Media Analysis, Natural Language Processing, Supervised and Unsupervised Approach, Big Data

2017

Vaikunth Sridharan (Master student) for kHealth Asthma project on real time scalable health dashboard "kHealthDash" that visualizes data from multiple streams and helps identify correlations, and obtain inferences.

2013

Vacation Research Programme (VRE)

International Medical University, Malaysia

PUBLICATIONS
GOOGLE SCHOLAR

2019

Book Chapter

[1] **Hong Yung Yip**, Nur A. Taib, Haris A. Khan and Sarinder K. Dhillon. "Electronic Health Record Integration". In: *Ranganathan, S., Gribskov, M., Nakai, K. and Schönbach, C. (eds.), Encyclopaedia of Bioinformatics and Computational Biology*, 2019, vol. 2, pp. 1063–1076. Oxford: Elsevier.

Guest Editorial

[1] Amit Sheth, **Hong Yung Yip**, Arun Iyengar, Paul Tepper. "Cognitive Services and Intelligent Chatbots: Current Perspectives and Special Issue Introduction" in *IEEE Internet Computing*, 2019.

2018

Journal

[1] Revathy Venkataramanan, Dipesh Kadariya, **Hong Yung Yip**, Utkarshani Jaimini, Krishnaprasad Thirunarayan, Maninder Kalra, Amit Sheth. "Determination of Personalized Asthma Triggers from Evidence based on Multimodal Sensing and Mobile Application". Submitted to *Journal of the American Medical Informatics Association (JAMIA)*, 2018.

Poster Workshop

- [1] Amit Sheth, **Hong Yung Yip**, Utkarshani Jaimini, Dipesh Kadariya, Vaikunth Sridharan, Revathy Venkataramanan, Tanvi Banerjee, Krishnaprasad Thirunarayan, Maninder Kalra. "Augmented Personalized Health: Using Semantically Integrated Multimodal Data for Patient Empowered Health Management Strategies". *mHealth Technology Showcase, National Institute of Health* - June 2018.
- [2] Utkarshani Jaimini, **Hong Yung Yip**, Revathy Venkataramanan, Dipesh Kadariya, Vaikunth Sridharan, Tanvi Banerjee, Krishnaprasad Thirunarayan, Maninder Kalra, Amit Sheth. "kHealth Digital Personalized Healthcare technology for Pediatric Asthma". *mHealth Technology Showcase, National Institute of Health* - June 2018.
- [3] Amit Sheth, **Hong Yung Yip**, Utkarshani Jaimini, Dipesh Kadariya, Vaikunth Sridharan, Revathy Venkataramanan, Tanvi Banerjee, Krishnaprasad Thirunarayan, Maninder Kalra. "Feasibility of Recording Sleep Quality And Sleep Duration Using Fitbit in Children with Asthma". *Abstract in the 32nd Annual Meeting of the Associated Professional Sleep Societies (SLEEP)*, 2-6 June 2018, Baltimore, MD.
- [4] Amit Sheth, Tanvi Banerjee, Utkarshani Jaimini, Dipesh Kadariya, Vaikunth Sridharan, Krishnaprasad Thirunarayan, Revathy Venkataramanan, **Hong Yung Yip**, Maninder Kalra. "Correlating Multimodal Signals With Asthma Control In Children Using kHealth Personalized Digital Health System". *Abstract in American Thoracic Society (ATS) International Conference*, 18-23 May 2018.

Article

[1] Amit Sheth, Utkarshani Jaimini, **Hong Yung Yip**, "How Will the Internet of Things Enable Augmented Personalized Health?" in *IEEE Intelligent Systems*, 33 (1), Jan-Feb 2018.

2016

Journal

[1] **Hong Yung Yip**, Melissa Poh Su Wei, Chia Yoke Yin. "The Effects of Glycyrrhizic acid And Glabridin in the Regulation of CXCL5 Inflammation Gene on Acceleration of Wound Healing". *Asian Pacific Journal of Tropical Biomedicine*, 2016, 6(2), p.108-113.

PROFESSIONAL SERVICES
& **ACTIVITIES**

2018

Content Contributor for Keynote "Towards Smart Chatbots for Enhanced Health: Using Multisensory Sensing, Semantic-Cognitive-Perceptual Computing for Monitoring, Appraisal, Adherence to Intervention" at *33rd AAAI-2019 Workshop on Reasoning and Learning for Human-Machine Dialogues*, January 27, 2019, Hawaii, USA.

Content Contributor for Keynote "Human-like Chatbots: Promises, Challenges, and Implications" at *ICWSM-2018 Workshop on Chatbots*, June 25, 2018, Palo Alto, CA.

External Reviewer of IEEE Internet Computing: Cognitive Services and Intelligent Chatbots

Program Committee member of *AAAI SmartIoT Workshop 2018: AI enhanced IoT data processing for Intelligent Applications*

Grant Writing experience and more at www.joeyyip.com

COMPUTATIONAL
SKILLS

Object Oriented Programming – Java, C++, Perl, and Python

Statistical Programming – MATLAB, R

Machine/ Deep Learning – Scikit-Learn, TensorFlow, Keras

Semantic Technologies – RDF, OWL, SPARQL, Ontology (SIDER, MedDRA, UMLS)

Natural Language Processing Toolkit – NLTK, Lucene

Database Management Systems – MySQL, Microsoft SQL Server, NoSQL MongoDB, Neo4j, Elastic Search

Distributed & Scalable Computing – Map-Reduce, Hadoop

Web Development – JavaScript, NodeJS, ExpressJS, NPM Frameworks, Bootstrap, HTML, XML, SVG

Blockchain – Solidity Smart Contract, Ethereum Framework

REFERENCES

Prof. Amit Sheth: Director, Kno.e.sis Center, Wright State University, Dayton, OH, USA

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Prof. Krishnaprasad Thirunarayan: Kno.e.sis Center, Wright State University, Dayton, OH, USA

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Associate Prof. Sarinder Kaur A/P Kashmir Singh: Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia
sarinder@um.edu.my; +603-79676741