Hung K. Chau

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School of Computing and Information • University of Pittsburgh, Pittsburgh, PA, USA
Agentic AI, Zillow Group, Seattle, WA, USA
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EDUCATION

University of Pittsburgh, PA, USA
Ph.D., Information Science Program, GPA: 3.986/4.0 *Graduation: Dec. 2023*
Advisor: Dr. Peter Brusilovsky; Co-advisor: Dr. Morgan R. Frank
Dissertation Title: *Explainable Course Recommendation: Connecting College Education to Knowledge and Careers Through Skills*
Committee: Dr. Peter Brusilovsky, Dr. Morgan R. Frank, Dr. Daqing He, Dr. Zachary A. Pardos

University of Information Technology, Ho Chi Minh City, Vietnam
M.S., Computer Science *Graduation: Feb. 2015*
Advisor: Dr. Nhon Do

University of Information Technology, Ho Chi Minh City, Vietnam
B.S., Computer Science, Honors Program, rank: 2/101 *Graduation: Feb. 2011*
Advisor: Dr. Nhon Do

RESEARCH INTERESTS

Large Language Models, Agentic and Conversational AI
Machine Learning and Deep Learning
Educational Data Mining and Pattern Discovery
Natural Language Processing (Knowledge Extraction and Representation)
Personalized Ranking and Recommendation

SKILLS

- Languages: Python, Java, R, Matlab, NodeJS, C++, C# .Net, SQL, HTML, CSS, JavaScript, Maple
- Deep Learning toolkits: TensorFlow, Pytorch, Keras
- Machine Learning toolkits: scipy, scikit-learn, statsmodels, CatBoost, SVM-light, R packages
- Toolkits: Langchain, OpenAI, RAGAS, HuggingFace, numpy, matplotlib, t-SNE, NLTK, Spacy, Stanford NLP, D3.js, Git

INDUSTRY EXPERIENCE

Zillow Group, Seattle, USA Jan 2024 – Now
Applied Scientist
- Built **Goal-oriented conversational chatbot**
- Built internal **agentic skills** and **guardrails** for chatbots
- Built evaluation systems with **LLM-as-a-judge**

Technical skills: Python, PySpark, AWS, Langchain, Langgraph, RAGAS, HuggingFace, Databricks, MLFlow, Streamlit, Cursor, Windsurf

Zillow Group, Seattle, USA Jan 2022 – Jan 2024
Applied Scientist
- Built the first real estate **Natural Language search** for Zillow home search
- Leveraged **user engagement signals** to build several **personalized ranking models** for Zillow home listings

Technical skills: Python, PySpark, PyTorch, AWS, HuggingFace, statsmodels. CatBoost, scikit-learn, Kubeflow

Zillow Group, Seattle, USA May 2020 – Aug 2020
Applied Scientist Intern
Leveraged ***user engagement data*** on Zillow websites to define *home demand* signals on the real estate market, and built machine learning models to improve ***home resale prediction*** values
Technical skills: Python, PySpark, AWS, statsmodels. CatBoost, scikit-learn

Zillow Group, Seattle, USA Sep 2019 – May 2020
Applied Scientist Intern
Implemented an Keyphrase Annotation system and built Logistic Regression and Bi-LSTM Deep Learning models to extract ***keyphrases*** from home listing descriptions for homes on Zillow websites
Technical skills: Python, PyTorch, AWS, NLTK, Spacy, Stanford NLP toolkits, Gensim

Zillow Group, Seattle, USA May 2019 – Aug 2019
Machine Learning Engineer Intern
Applied ***deep learning*** techniques and ***regular expressions*** to detect customers' personal identifiable information (***PII***) to protect their privacy in a *big data* setting
Technical skills: PyTorch, Python, AWS, NLTK, SQL, Airflow

Lac Viet Computing Corporation, Vietnam Mar 2013 – Sep 2015
Part-time software Engineer
Worked on ***mobile applications*** on Windows Phone OS such as Lac Viet Dictionary, Lac Viet Reader, Words Usage Practice, etc.
Technical skills: C# .Net, Windows Phone, Silverlight, SQLite

RESEARCH EXPERIENCE

Member of "*Development and Implementation of a Health E-Librarian with Personalized Recommendations (HELPeR)*" project, funded by National Institutes of Health (NIH) U.S, led by Dr. Young Ji Lee, Dr. Peter Brusilovsky and Dr. Daqing He. Working on ***extracting concepts*** in medical text documents using ***NLP*** and ***ML classification*** and ***deep sequential models***, and working on *personalized recommendation*.
Technical skills: Python, PyTorch, Spacy, Stanford POS tagger, scikit-learn, SVMlight, matplotlib, Jupyter notebook
(01/2020 – 05/2020)

Collaborating with Dr. Zachary Pardos in "*Improving Articulation of Credit and Transfer Student Support at CUNY*" project. Working on ***learning representation*** and ***semi-supervised/unsupervised machine translation*** techniques to articulate courses for multiple institutes in New York city.
Technical skills: PyTorch, Keras, Python, matplotlib, t-SNE, D3 visualization library, Jupyter notebook
(09/2019 – 01/2020)

Collaborated with Dr. Zachary Pardos in "*Deep Learning in Higher Education Big Data to Explore Latent Student Archetypes and Knowledge Profiles*" project. Working on ***learning representation*** and ***supervised machine translation*** techniques to find equivalent courses across colleges.
Technical skills: Keras, Python, matplotlib, t-SNE, D3 visualization library, Jupyter notebook
(05/2018 – 08/2019)

Member of "*Open Corpus Personalized Learning*" project, funded by National Science Foundation (NFS), U.S, led by Dr. Peter Brusilovsky and Dr. Daqing He. Working on ***extracting concepts*** in textbooks using ***NLP*** and ***ML classification models***, and working on ***predicting student performance*** in class.
Technical skills: Java, Python, HTML, Javascript, SQL, Stanford POS tagger, scikit-learn, SVMlight, matplotlib, R, R Markdown, Jupyter notebook
(08/2016 – 09/2019)

Member of "*Researching and Developing the Sematic-based Solution for Learning Resources Management*" project, funded by VNU-HCM, worked on revising and improving the CK-ONTO model in as ***document retrieval*** system design.
Technical skills: HTML, Javascript, C# .Net, SQL
(06/2014 – 06/2015)

PUBLICATIONS

Hung Chau (2024)
Committee Members: Peter Brusilovsky, Morgan Frank, Zach Pardos, Daqing He
Explainable Course Recommendation: Connecting College Education to Knowledge and Careers Through Skills
University of Pittsburgh 2024

Hung Chau, Sarah H. Bana, Baptiste Bouvier, Morgan R. Frank (2023)
Connecting Higher Education to Workplace Activities and Earnings
PLOS One 2023

Mengdi Wang*, **Hung Chau***, Khushboo Thaker, Peter Brusilovsky, Daqing He (2021)
Knowledge Annotation for Intelligent Textbooks
Journal of Technology, Knowledge and learning (TKNL) 2021

Run Yu, Zach Pardos, **Hung Chau**, Peter Brusilovsky (2021)
Orienting Students to Course Recommendations Using Three Types of Explanation
Adjunct Proceedings of the 29th Conference on User Modeling, Adaptation & Personalization, June 21-25, 2021, Utrecht, Netherlands

Hung Chau, Saeid Balaneshin, Kai Liu, Ondrej Linda (2020)
Understanding the Tradeoff between Cost and Quality of Expert Annotations for Keyphrase Extraction
The 14th Linguistic Annotation Workshop (COLING 2020), Dec 12, 2020, Barcelona, Spain

Hung Chau, Igor Labutov, Khushboo Thaker, Daqing He, Peter Brusilovsky (2020)
Automatic Concept Extraction for Domain and Student Modeling in Adaptive Textbooks
International Journal of Artificial Intelligence in Education (JAIED) 2020

Behnam Rahdari, Peter Brusilovsky, Khushboo Thaker, **Hung Chau** (2020)
CovEx: An Exploratory Search System for COVID-19 Scientific Literature
The 3rd International workshop on Epidemiology meets Data Mining and Knowledge discovery, Aug 24, 2020, San Diego, CA, USA

Zachary Pardos, **Hung Chau**, Marshall Zhao (2019)
Data-Assistive Course-to-Course Articulation Using Machine Translation
Proceedings of the 6th ACM Conference on Learning @ Scale (L@S) June 24-25, 2019, Chicago, Illinois, USA [**Best paper award]**

Hung Chau, Jordan Barria-Pineda, Peter Brusilovsky (2018)
Course-Adaptive Content Recommender for Course Authoring
Proceedings of the 14th European Conference on Technology Enhanced Learning (EC-TEL), September 06-09, 2018, Leeds, UK

Hung Chau, Jordan Barria-Pineda, Peter Brusilovsky (2018)

Course-Adaptive Content Recommender System for Instructors of Programming Courses
Proceedings of the 19th International Conference on Artificial Intelligence in Education (AIED), June 27-30, 2018, London, UK

Hung Chau, Jordan Barria-Pineda, Peter Brusilovsky (2017)
Content Wizard: Concept-Based Recommender System for Instructors of Programming Courses
Adjunct Proceedings of the 25th Conference on User Modeling, Adaptation & Personalization, July 09-12, 2017, Bratislava, Slovakia

Hung Chau*, Ang Li* and Yu-Ru Lin (2017)
Predicting Students Performance Based on Their Reading Behaviors
Online Proceedings of SBP-BRiMS 2017, July 05-8, 2017, Washington DC, USA

Nhon V. Do, TruongAn PhamNguyen, **Hung K. Chau**, ThanhThuong T. Huynh (2015)
Improved semantic representation and search techniques in a document retrieval system design
Journal of Advances in Information Technology, Volume 6, No. 3, August, 2015, USA

Nhon Do Van, **Hung Chau**, Van Ho Long (2011)
An Intelligent Educational Software for Automatic Problem Solving in Linear Algebra
In Proceedings of ICCSE 2011, August 3 - 5, 2011, Singapore

HONORS AND AWARDS

- Best Paper Award at ACM Conference on Learning @ Scale 2019
- 03/2016: Vietnam Education Foundation (an independent U.S. Federal Government agency created by the U.S. Congress) 2015 Fellow
- 11/2009: "SINH VIEN 3 TOT" certificate for excellent performance in Academic Accomplishment, Studiousness, and Physical; awarded by HCM Communist Youth Union
- 2009: The SMBC Global Foundation Scholarship Award; Institute of International Education
- 2007 – 2009: Certificates of Satisfactory Progress from the rector of UIT by having excellent academic accomplishment and studiousness

CERTIFICATES

- LearnLab: Simon Initiative Summer School at CMU. Advised by Dr. Zach Pardos, University of California at Berkeley

OTHERS

- Github: https://github.com/HungChau
- HuggingFace: https://huggingface.co/HungChau
- Google Scholar: https://scholar.google.com/citations?user=eqdfdmIAAAAJ&hl=en