THUA-PHONG LAM

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I obtained my pharmacist degree in 2022 and am currently pursuing a Master's degree in Pharmaceutical Science, majoring in Pharmaceutical modeling at Uppsala University, Sweden. My research interest involves employing computational techniques, especially molecular modeling methods and machine learning predictive models to advance the drug discovery process. I am a person who is always willing to learn and share, have a sense of responsibility, and pursue a career in academia.

EDUCATION

Transcripts

Uppsala University, Uppsala, Sweden **2023 - 2025**

- **Master** of Pharmaceutical Science | **Major:** Pharmaceutical modeling
- **Principal subjects/skills covered:**
  - Train, validate, and use predictive models based on biochemical data
  - Account for how a molecular mechanics forcefield is constructed.
  - Set up, perform, and evaluate different virtual screening methods.
  - Account for and set up molecular dynamics simulations and free energy calculation.

University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam **2017 - 2022**

- **Bachelor** of Pharmacy (5-year program) | **Major:** Medicinal chemistry | Computer-aided drug design
- **Thesis:** In silico virtual screening and binding affinity evaluation of potential interleukin-33 inhibitors.
- **GPA**: 3.59/4.00 (rank 2/368) – **Thesis**: 9.9/10 (rank 1)

Additional courses – Selected: Training certificates

- **Deep Learning Specialization (DeepLearning.AI):** certified by Coursera (2024)
- **Data Scientist with Python:** certified by Datacamp (2023)
- **Machine Learning Specialization (Stanford University & DeepLearning.AI):** certified by Coursera (2023)
- **VinUni-Illinois Smart Health Center Workshop:** a fully funded program for 40 students across Vietnam about the applications of AI/ML in healthcare devices in VinUniversity campus, Hanoi, Vietnam (2022).

WORK EXPERIENCE

University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam

Research Assistant, Department of Medicinal Chemistry **05/2019 – 12/2023**

Advisors: Dr. Tan Thanh Mai | Prof. Dr. Khac-Minh Thai

IL-33/ST2 inhibitors project (2021-2023): The project objective is to focus on applying *in-silico* approaches and *in-vitro* methods to discover the small molecule inhibitors of the Interleukin-33 (IL-33) / ST2 axis.

- Conducted different virtual screening stages including homology modeling, 3D-pharmacophore, molecular docking, molecular dynamics simulation, and binding free energy calculation for identifying putative IL-33 inhibitors.
- Applied conventional machine learning methods (Linear Regression, SVM, RandomForest, XGBoost) and deep learning techniques (MLP, GNN) to build a classification model for ST2 inhibitors.
- Applied cosolvent dynamics simulation methods (MixMD) to find putative binding sites on IL-33 and ST2.
- Adapted and applied an *in-vitro* protocol for binding properties characterization using fluorescent spectroscopy.

Flavonoids as anti-α-glucosidase and α-amylase dual-target inhibitors (2022-2023): The project aims to evaluate the inhibitory activity of synthetic and natural flavonoids against anti-diabetic targets.

Computational antiviral projects (2021-2022): The projects' goals were to evaluate the inhibitory activity of in-house chalcones and commercial drugs against emerging viral pandemics such as COVID-19 and Monkeypox.

Research Assistant, Department of Clinical Pharmacy **08/2022 – 02/2023**

Prediction of antibiotic resistance in hospitalized patients using machine learning algorithms from medical record data: The study aims to develop machine learning models to predict the susceptibility of bacteria against a set of empirical antibiotics used in current treatment guidelines. My main responsibilities included developing machine learning models using different resampling methods to handle the imbalanced dataset.

HONOURS AND AWARDS

- **Anders Wall Scholarships (2024):** a tuition fee scholarship awarded by Uppsala University.
- **Graduate Student Merit Award for Top-ranking graduates (2022):** awarded to the top 1% of students.
- **Certificate of outstanding contribution to the faculty's extracurricular activities (2022).**
- **UMP Scholarship for excellent students (2017-2022):** full tuition fee scholarship for the top 10% of best students.
- **Third prize in Summer Research Scholarship (2020):** a student scientific research program for 5 outstanding students.
- **OPC Scholarship (2020):** full tuition scholarship for 10 excellent students in the academy, awarded by OPC Company.
- **Homtamin scholarship (2019):** for outstanding students in the academy and social activities, awarded by Korea United Pharm Company

PUBLICATIONS Selected articles

Full list of publications and conference attendances

1. **Lam T-P**, Tran N-VN, Pham L-HD, ... & Tran TD. (2024). Flavonoids as dual-target inhibitors against α-glucosidase and α-amylase: a systematic review of in vitro studies. *Nat. prod. bioprospect*. 14(4). [Link]
2. Mai TT, Phan MH, Thao TT, **Lam TP**, ... & Tran TD. (2023). Discovery of novel flavonoid derivatives as potential dual inhibitors against α-glucosidase and α-amylase: virtual screening, synthesis, and biological evaluation. *Mol. Divs*. [Link]
3. **Lam TP**, Tran VH, Mai TT, Lai NVT, Dang BTN., Le MT, ... & Thai KM. (2022). Identification of Diosmin and Flavin Adenine Dinucleotide as Repurposing Treatments for Monkeypox Virus: A Computational Study. *Int. J. Mol. Sci.*, *23*(19). [Link]
4. **Lam TP**, Nguyen DN, Mai TT, Tran TD, Le MT,... & Thai KM. (2022). Exploration of chalcones as 3-chymotrypsin-like protease (3CLpro) inhibitors of SARS-CoV-2 using computational approaches. *Struct. Chem.*, *33*(5). [Link]

SOFT SKILLS

Languages: Vietnamese (native), English (full professional proficiency)

Technical skills:

- Proficient in using programming languages for data analysis and visualization (R and Python), product communication (R Markdown and Latex), and version control (Git).
- Narrative and systematic review using Rayyan.
- Highly skilled in different operating systems: Unix and Windows
- Proficient in different molecular modeling techniques (pharmacophore, molecular docking, molecular dynamics simulation, homology modeling).
- QSPR/QSAR modeling using Rdkit, Sci-kit Learn, TensorFlow, and PyTorch.
- Analytical techniques (spectroscopy, titration), in-vitro experiments (enzyme-based assay)

Leadership skills:

- Good communication skills gained through five years of working in the faculty's academic club and two years working in the faculty's student association.
- Good organizational skills gained through organizing at least 14 research-oriented seminars and 6 student scientific research programs for young pharmacy students.
- Leadership (worked as the academic club president supervising 30 members for 2 years)
- Mentoring (mentored two junior research groups participating in student research programs in 2022)

SOCIAL ACTIVITIES

2023: Contributor of Sweden Mentor, an AI chatbot based on a large language model to provide information about life in Sweden for new students.

2019 – 2021: Member of the committee of the Faculty's Student Association

2017 - 2022: Member/President/Mentor of Pharmacy Academic Club

REFERENCES

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