Open PhD and Postdoc Positions in AI for Biomedical Imaging

Bright scholars (PhD and Postdoc levels) urgently need to develop novel AI and data-driven approaches for biomedical imaging. Our goal is to build a digital platform to jointly analyze digital pathology images demonstrated on rapidly evolving cancers from rare osteosarcoma (bone) cancer, squamous cell (skin) carcinoma, to adenocarcinoma (cervical, breast, colon, lung, liver, GI tract). Imagine what can you achieve with an intelligent health analytics ecosystem supported by: (1) unique data on patients with rare diseases in Vietnam – serving as out-of-distribution testing set for the platform; (2) novel methods to be developed jointly with Mayo Clinic physicians, Coordinated Science Lab at Illinois, and VinUniversity faculty members; and (3) accelerated supercomputing platform hosted at the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign.

Multiple positions, including Postdoc, PhD, Master, to Undergraduate, are available.

Qualifications

- (Postdoctoral Scholar) A Ph.D. in computer science, computer vision, machine learning, bioengineering, statistics, science or engineering in a specialization relevant to smart health.
- Familiarity in developing and using Machine Learning methods including Bayesian Networks, Deep Learning, Probabilistic Graphical Models, and Large Language Models.
- Experience working with heterogeneous health data sets such as the National Institutes of Health (NIH) Cancer Genome Atlas, data acquisition, preprocessing, and labeling.
- Proficiency in Python-based machine learning, image processing and computer vision toolboxes (such as PyTorch, OpenCV, scikit-image, or MONAI).
- Hands-on experience with accelerated computing, such as GPU architecture, and CUDA programming, is preferred.

Key responsibilities:

- Design experiments for validating early prediction of metastasis cancer on different datasets.
- Derive intelligently scheduling inference algorithms to accelerate the image processing pipeline.
- Lead authorship efforts for organizing and publishing the research outcomes as research proposals, white-papers, scientific abstracts and journal articles.

Successful deliverables:

- Deploying a platform to attract funding agencies, and all-level students to VinUniversity, starting from high school, train Undergrad/Master/PhD students, and enrich supercomputing experience for postdoctoral scholars;
- Delivering and multiplexing computing allocation at the NCSA/CSL's supercomputer platform while being guided by domain experts operating medical AI analytics at Mayo-NCSA's secure HIPAA-compliant health enclave;
- Developing a new revenue stream of foundational AI pathology prediction models by licensing to U.S. hospitals focusing on Asian-American patients;
- Assisting Vinmec's AI-assisted pathologists will be productive and enable surgeons to realize transformational clinical outcomes, such as early recognition of tumors in super-resolution whole-slice images.

Key benefits: Each VISHC Postdoc Fellow will receive a total salary of $90,000 for two years, of which $30,000 will be for conducting research at VinUniversity and $60,000 at UIUC. For more details, please visit https://smarthealth.vinuni.edu.vn/vishc-phd-and-postdoc-program/

Application is open on a rolling basis: Please send your cover letter, and CV, highlight the most important publications, and name of three references to both pcao3@illinois.edu (Dr. Phuong Cao) and hieu.ph@vinuni.edu.vn (Dr. Hieu Pham). Please indicate in the email subject line VISHC_PRECISION_PATHOLOGY_{POSTDOC,PHD,MASTER,UNDERGRAD_YOUR_NAME. Qualified candidates will be contacted for an interview.