HUAN TRUONG

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I am seeking an opportunity to combine my interdisciplinary research experience and technical skills in order to solve a global problem: equal, open, and fast access to information and educational opportunities.

Education

- **University of Missouri – Columbia, MO** *Aug 2012 – Aug 2017 (Anticipated)*
  PhD in Bioinformatics.
- **Truman State University – Kirksville, MO** *Jan 2008 – Dec 2011*
  Bachelor of Science in Computer Science. Graduated with Department Honors.

Technical Skills

- **Informatics**: *High performance computing*, bioinformatics, modeling biologoical networks with graph theory, data mining, cryptography.
- **Architecture-specific Software Development**: Android app development, heterogeneous parallel systems (emph. *CUDA*), embedded processors (TI MSP, AVR, ARM), embedded software development, elementary electronics.
- **Linguistics**: Natural language processing.
- **Programming languages**: *C/CUDA, Go, Java*, PHP, HTML/CSS, JavaScript, Python.
- **Tools**: Git, LaTeX, data visualization (R), network visualization (gephi), UNIX Shell.

Professional Experience

- **Missouri Informatics Institute, University of Missouri – Columbia, MO** *Aug 2012 – Present*
  Research and Teaching Assistant. Evolutionary Systems Lab.
  - Conducted research on filtering noise from multi-dimensional biological data using high-performance computing.
  - Published 4 papers on sequence alignment, taxonomic clustering, motif finding – achieved 40x speedup with GPU.
  - Acted as teaching assistant for introductory molecular biology class and delivered graduate-level guest lectures.
- **Agency for Science, Technology and Research (A*STAR) – Singapore** *May – Aug 2015*
  Research Officer. Dr. Pauline Ng's Research Group.
  - Conducted research on implementing an Open Science project through text annotation.
  - Spearheaded the creation of a Chrome and Firefox extension that allows researchers to annotate and collaborate on the annotation of academic papers using PDF.js and Annotator.js framework, to provide an open knowledge social network.
- **Human-Computer Interaction Institute, Carnegie Mellon University – Pittsburgh, PA** *May – Jul 2011*
  Summer REU Intern. Pittsburgh Science of Learning Center.
  - Conducted research on enhancing conversational capability for simulated agent leading to more effective learning-by-teaching with elementary algebra.
  - Analyzed corpuses of human input and studied patterns in students' shallow answers to develop more comprehensive questioning engine that would result in deeper understanding of methods and materials for student.
  - Implemented code in Java and conducted experiments to study the effectiveness of enhanced engine.

- IT Services, Truman State University – Kirksville, MO *Mar 2008 – Aug 2012*
  Software and Web Developer.
  - Deployed and installed new infrastructures and automated monitor-and- control systems for the whole campus.
  - Orchestrated the customization, programming, and implementation of low cost, open hardware (Chumby) to replace embedded control devices infrastructure in classrooms. Cost reduction result: 1/20 original cost.
  - Diagnosed and provided hand-on repair of network, software, and hardware related issues. Created software to report and display live statistics of all computers campus-wide.
  - Created cross-platform school mobile app, websites, and maintained code repository for internal IT infrastructure.

Selected Peer-reviewed Publications

- **H. Truong**, D. Li, K. Sajjapongse, G. Conant and M. Becchi, *Large-Scale Pairwise Alignments on GPU Clusters: Exploring the Implementation Space*, Journal of Signal Processing Systems , 1–19 (2014)
- A. Todd, **H. Truong**, J. Deters, J. Long, G. Conant and M. Becchi, *Parallel Gene Upstream Comparison via Multi-Level Hash Tables on GPU*, Accepted, Parallel and Distributed Systems (ICPADS), 2016 IEEE 22nd International Conference on (2016)
- M. J. Ellison, G. C. Conant, R. R. Cockrum, K. J. Austin, **H. Truong**, M. Becchi, W. R. Lamberson and K. M. Cammack, *Diet Alters Both the Structure and Taxonomy of the Ovine Gut Microbial Ecosystem*, DNA Research , dst044 (2013)
- D. Li, K. Sajjapongse, **H. Truong**, G. Conant and M. Becchi, A distributed CPU-GPU framework for pairwise alignments on large-scale sequence datasets, in *Application-Specific Systems, Architectures and Processors (ASAP), 2013 IEEE 24th International Conference on*, pages 329–338, 2013

Extracurricular Activities

- High Altitude Balloon (HAB) Education – hab.education *Oct 2014 – Present*
  Co-Founder with Dustin Mayfield-Jones
  - Provided opportunities for junior and high school students to get involved in STEM by working on HAB launches to near space.
  - Designed and engineered software, tracking hardware and lesson plans, paritipated in events, organized workshops, networking events, planned interviews, and other organizational activities.
- On-Campus Student Activities
  Various leadership positions
  - University of Missouri Informatics Institute: Secretary (2016), Treasurer (2015), Symposium Organizing Committee Member & Webmaster (2013-2016).
  - University of Missouri Vietnamese Student Association and the Vietnamese Institute: Event Organizing Committee Member & Treasurer (2015-2016), Webmaster (2014-2016).
  - Truman State University Free Software Club of Kirksville: President (2011-2012).
- Programming Projects
  Full list of projects can be found at www.tnhh.net/projects.html
  - Android Sophia Keyboard: Smart keyboard, ultilizing fuzzy word matching to enable fast Vietnamese input.
  - Google Two-Factor Authentication in a Wristwatch. First implementation of a two-factor authentication system on the Texas Instrument Chronos watch ultra-low-power MSP430 platform.
  - Go-md2: MD2 hashing implementation in Go programming language.
  - Truck, Thin Ubuntu-based distribution: A Linux distribution designed to boot on diskless, low-cost, distributed compiler client workstations for on-campus computer labs.