Thien Hoang | Curriculum Vitæ

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Education

- **Vietnamese–German University** — **Binh Duong, Vietnam**
  Bacherlor of Science, Computer Science — *2017–present*
  VGU is a Vietnamese public university. It establishes a partnership with Frankfurt University of Applied Science in providing the Computer Science program to undergraduate students.

- **Ly Tu Trong Gifted High School** — **Can Tho, Vietnam**
  Vietnam National High School Graduation Examination — *2016–2017*

Skills and Interests

- **Programming Languages:** C/C++, Python, Java, JavaScript, Pascal, Shell, TeX.
- **Technology:** Git, GitHub, CGAL, Jekyll, Jupyter Notebook, RESTful API, Heroku, Adobe Illustrator, Meshlab, Doxygen.
- **Language Proficiency:** Vietnamese (*native*), English (*IELTS 7.5*), German (*limited*).
- **Research interests:** Graph Theory, Computational Topology, Computational Geometry, Linear Algebra.
- **Other skills:** Documentation Writing, Template Metaprogramming, Front-End Web Development, Competitive Programming.

Awards and Honours

- **Vietnam Olympiad of Informatics** — **by MoET**
  2nd Prize, Ranked #34 — *2017*
  An annual competitive programming contest held by the Ministry of Education and Training of Vietnam for high-school students to select representatives for the International Olympiad of Informatics (IOI).

- **The April 30 Olympiad of Informatics** — **by HCMC DoET**
  Gold Medal, Ranked #6 — *2016*
  An annual competitive programming contest held by HCMC's Department of Education and Training for Southern-Vietnamese high-school students.

- **VGU Merit Scholar** — **by VGU**
  75% and 50% scholarships — *2017-2019*
  Honorable receiver of the Vietnamese-German University's merit scholarship during the academic years 2017-2018 (75% tuition fee) and 2018-2019 (50% tuition fee).

Activities

- **Google Summer of Code** — **CGAL Project & Google LLC**
  Student Developer — *2019, 2018*
  An annual program in which Google awards stipends to all students who successfully complete a requested free and open-source software coding project during the summer.

- **PiMA Summer Camp** — **in HCMC, Vietnam**
  Mentor — *2019, 2017*
  The program aiming at teaching high-school students how to apply mathematics to real-life problems. In 2017, I mentored a group of three students on the project "Evaluate biomedical devices", using Python to analyze data and LaTeX to present the report.

- **Google Code-in** — **Google LLC**
  Student Developer — *2016*
  An annual programming competition hosted by Google Inc. where pre-university students complete tasks specified by various, partnering open source organizations. During this program, I mainly worked on two projects, namely the FOSSASIA GCi Website and the Susi Bot.

- **Free Contest**
  Junior System Admin & Problem-setter — *2016*
  A weekly IOI-like competition for Vietnamese students, held by a small group of enthusiastic programmers. I managed the server of the contest and designed some programming problems for the participants.

Experience

C++ Library Developer

Centre National de la Recherche Scientifique
CGAL Contributor — *2019*
Advisors: Dr. Guillaume Damiand (CNRS) & Dr. Francis Lazarus (GIPSA-lab)

I implemented the algorithm to compute non-contractible cycles on a 2-manifold, being part of the *Surface mesh topology* package. It is then used to find the edge-width and the face-width of the surface. The surface can be orientable or non-orientable.

Institut National de Recherche en Informatique et en Automatique
CGAL Contributor — *2018*
Advisor: Dr. Dmitry Anisimov (INRIA)

I implemented the region growing algorithm, being a part of the *Shape detection* package. The algorithm has been generalized to be working with any user-defined elements, connectivity method, and validity checking rules. Popular instantiations of the algorithm include:
- Detect 3D planes from a cloud of points with normals attached to them.
- Detect 3D planes in a polygonal mesh.
- Detect 2D lines among a set of 2D points.

It searches for spatially neighboring points using Kd tree, and the planes/lines are fit using Linear regression method. It is a robust, simple, and consistent shape detection algorithm, improved from RANSAC method, and is used widely in 3D/2D segmentation.