Department of Software Engineering
An Overview

http://fit.uet.vnu.edu.vn/se/
Content

- Research areas
- Members and research interests
- Projects and collaborations
Research areas (1)

- **Formal methods**
  - Mathematical based techniques for specification, development and verification of software

- **Software testing**
  - Automated testing, test case generation

- **Software Verification**
  - Conformance (i.e., specifications to implementation)
  - Model checking, Program analysis, Program abstraction, Symbolic executions

- **Software architecture**

- **New approaches to software engineering**
  - Component-based, model-based, services-based, agent-based software
Research areas (2)

• Mobile and embedded systems
  – Android, iOS, Windows Phone

• Cloud computing, web development
  – Google App Engine, Azure, Rails, Django, etc

• Cloud robotics
Research areas (3)

• See members’ homepages
  – Publications: past and recent topics
  – Projects: specific research problems, directions

http://fit.uet.vnu.edu.vn/se/
Faculty (1)

- Total: **16** (5 Assoc. Prof, 6 Dr., others: 05)
- **05** Assoc. Prof., Dr.

<table>
<thead>
<tr>
<th>Name</th>
<th>Email (@vnu.edu.vn)</th>
<th>PhD in</th>
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<tbody>
<tr>
<td>Nguyễn Ngọc Bình</td>
<td>nnbinh</td>
<td>Japan (Ex – Rector)</td>
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<tr>
<td>Nguyễn Việt Hà</td>
<td>hanv</td>
<td>Japan (Rector)</td>
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<tr>
<td>Trường Ninh Thuận</td>
<td>thuantn</td>
<td>France (Vice dean)</td>
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<td>Trường Anh Hoàng</td>
<td>hoangta</td>
<td>Norway</td>
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<tr>
<td>Phạm Ngọc Hùng</td>
<td>hungpn</td>
<td>Japan (Head of SE)</td>
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# Faculty (2)

- **06 Dr.**

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<th>Name</th>
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<tr>
<td>Nguyễn Thị Huyền Châu</td>
<td>chaunth</td>
<td>France</td>
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<tr>
<td>Đặng Đức Hạnh</td>
<td>hanhdd</td>
<td>Germany</td>
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<tr>
<td>Võ Đình Hiếu</td>
<td>hieuvd</td>
<td>Japan (Deputy Head of SE)</td>
</tr>
<tr>
<td>Đặng Văn Hương</td>
<td>dvh</td>
<td>Hungary</td>
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<tr>
<td>Tô Văn Khánh</td>
<td>khanhtv</td>
<td>Japan</td>
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<tr>
<td>Vũ Điều Hương</td>
<td>Huongvd</td>
<td>Japan</td>
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</table>
## Faculty (3)

### Others: 05

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<tr>
<th>Name</th>
<th>Email (@vnu.edu.vn)</th>
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<tbody>
<tr>
<td>MSc. Nguyễn Việt Tân</td>
<td>tannv</td>
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<tr>
<td>BSc. Nguyễn Đức Anh</td>
<td>nguyenducanh</td>
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<tr>
<td>BSc. Nguyễn Văn Sơn</td>
<td>sonnguyen</td>
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<tr>
<td>BSc. Nguyễn Hà Thanh</td>
<td>Nguyenhathanh</td>
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<tr>
<td>BSc. Vũ Việt Anh</td>
<td>Anhvv_57</td>
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</table>
Assoc. Prof. Dr. Nguyễn Ngọc Bình

• Research interests:
  – Real-Time Embedded Systems
    • Optimization Algorithms for Embedded Systems Codesign, EDA
  – Software Engineering (Software Evolution, Software Architectures, Software Components, Embedded Software Engineering, ...)
  – Parallel & Distributed Processing
  – Network Technology
  – E-Learning

• Email: nnbinh (@vnu.edu.vn)

Visiting professor at Japan in 2016-2017

Ex - President of UET
Dr. Nguyễn Thị Huyền Châu

• Research interests:
  – Realtime & embedded systems
  – Software verification and testing

• Email: chaunth (@vnu.edu.vn)
Assoc. Prof. Dr. Nguyễn Văn Việt Hà

• Research interests:
  – Software agents
  – Formal methods
  – Software architecture

• Email: hanv (@vnu.edu.vn)

President of UET
Dr. Đặng Đức Hạnh

• Research interests:
  – Domain-specific modeling and languages
  – Model transformation
  – Model-driven development languages and tools
  – Software verification and validation
  – Formal methods

• Email: hanhdd (@vnu.edu.vn)
Dr. Võ Đình Hiệu

- Research interests
  - Software Architecture
  - Service-oriented Architecture
  - Program analysis
  - Robot

- Email: hieuvd (@vnu.edu.vn)
Assoc. Prof. Dr. Trương Anh Hoàng

• Research interests:
  – Program analysis and verification
  – Software testing
  – Cloud computing
  – Type systems

• Email: hoangta (@vnu.edu.vn)
Assoc. Prof. Dr. Phạm Ngọc Hùng

• Interests:
  – Formal Methods,
  – Software verification and testing,
  – Assume-guarantee verification,
  – Program analysis
  – Conformance testing, software evolution

• Email: hungpn (@vnu.edu.vn)
Dr. Đặng Văn Hùng

• Research interests:
  – Formal design methods for real-time systems,
  – Model checking,
  – Algorithms for real-time systems,
  – Component-based software

• Email: dvh (@vnu.edu.vn)
Dr. Vũ Diệu Hường

• Research interests:
  – Verifying the Conformance: Design, implementation, Specification
  by using Testing technique
  – Generating Test Cases and Test Oracle from Formal Specification
  – Develop Test Executor – Test Tool for Test Automation

• Liên hệ: huongvd (@vnu.edu.vn)
Dr. Tô Văn Khánh

• Research interests:
  – SAT Encoding and applications
  – SMT Solver: algorithms, designs, and applications
  – Software Verification and Testing
  – Program analysis, Program abstraction
  – Symbolic execution

• Email: khanhtv (@vnu.edu.vn)
Assoc. Prof. Dr. Trương Ninh Thuận

- Research interests:
  - Formal methods, Formal verification
  - Service-centric Software Engineering
  - Component-based Software Engineering
  - Software Security

- Email: thuantn (@vnu.edu.vn)
MSc. Nguyễn Việt Tân

• Research interests:
  – Software engineering
  – Data mining
PhD students

• About ~20 PhD students are advised by the department professors

• Many former department members are studing PhD abroad (5 postdoc, many PhD students), lecturers at other universities (Hai Phong Univ., HPU, HUMG, ACT)
Teaching

- Software Engineering
- Requirement Engineering
- Object-Oriented Analysis and Design
- Software Architectures

- Principles of Programming Languages
- Functional Programming
- Object-Oriented Programming

- User Interface Design
- Software Testing & Quality Assurance
- Software Project Management

- Formal Methods in Software Engineering
- Service Oriented Architecture
- Real-time and Embedded Systems
Research projects – Externally funded

• Government funded
  – By NAFOSTED: 03
    • Software verification, program analysis, type systems....
  – By VNU, QGTD: 03
    • SMT solvers and applications, automated test case generation, program verification...
Research projects – Externally funded

- Companies funded
  - By Mitani Sanygo
    - Software project cost estimation based on case-based reasoning
    - Test suite generation and specification conformance checking
  - By Panasonic Vietnam
    - Roundoff error visualization, measurement and improvement
    - Scalable database on cloud computing platforms
  - By Toshiba (Toshiba lab), ..
Active academic collaborations

- JAIST  Japan  Advanced Institute of Science and Technology
- AIIT  Advanced Institute of Industrial Technology, Japan
- UNU-IIST  United Nations University, Macau
- NUS  National Univ. of Singapore
- Univ. of Bremen  Germany
- Univ. of Oslo  Norway
- LAAS/CNRS  France
- ...
Liên hệ

- PGS. TS. Phạm Ngọc Hùng (hungpn)
- TS. Võ Đình Hiếu (hieuvd)
- P. 321 – E3
- Website: [http://fit.uet.vnu.edu.vn/se/](http://fit.uet.vnu.edu.vn/se/) => member s’ homepage
- Facebook: search “facebook Bộ môn CNPM Khoa CNTT Trường ĐH CN”
- Các tư vấn, thông báo, ... đều được lên lên facebook và Website