复旦大学研究生 FIST 项目课程简介表

课程名称	高等服务工程化方法			
英文名称	Advanced Services Engineering			
开课院系	计算机科学技术学院	学分[1]	3	总学时	75 hours (lecture, discussion)，其中实验课学时 35

主讲教师简介（每位教师附一张照片和 100 字以内简介）

Hong-Linh Truong is a Priv.-Doz. and an Assistant Professor at the Faculty of Informatics, TU Wien, since 2013. He leads the Service Engineering Analytics team in Distributed Systems at TU Wien. He received a PhD (2005) and a Habilitation (2013) from TU Wien, Austria. Before taking the current position, he was a senior researcher at TU Wien (2007-2013), a post-doc researcher at University of Innsbruck (2005-2007), a researcher at University of Vienna (2000-2005) and an assistant lecturer at BachKhoa University (1998-2000). He has been visiting professors at Bach Khoa University (2016, 2017), HCMC, Vietnam, Da Nang University of Science Technology (2016), and visiting scholars at University of Southern California (Center for Cyber-Physical Systems and Internet of Things, Sep 2017) the University of California, Irvine (July-Aug, 2017), the Japan National Institute of Informatics (NII) (2017), University of Chicago (2016), Shenzhen University (2016), Lund University (2014), and University of Stuttgart (2010). More information about his research and teaching can be found at http://www.infosys.tuwien.ac.at/staff/truong

课程大纲（500 字以内，可另附页）

The objective of this course is to introduce new concepts and techniques for developing and engineering advanced services in emerging distributed computing systems including IoT (Internet of Things), network functions, cloud services, blockchain, machine learning and human-based services. In this course, we will examine the roles of IoT, cloud services, blockchain, data-as-a-service, data concerns, data marketplaces, machine learning for advanced elastic services. We study and implement techniques for developing such services by utlizing IoT data and other types of data with compute services in cloud environments. Furthermore, we will investigate human-based services in engineering advanced data analytics and how to combine them with data and compute services. All of them create emerging hybrid computing systems for various important domains, such as smart cities, predictive maintenance, etc.

The course will provide hand-on experiences via real-world exercises and mini programming projects. This follows project-based course approach. The course will provide a great interaction between students and the instructor. Students are expected to produce realistic applications and services to demonstrate their selected scenarios.

计划开课时间应在 2018 年年底前完成授课			2018-07-12 至 2018-07-18	

课程进度安排：12-18 July, 2018

日期	星期	节次[2]	上课内容	授课教师
2018-07-12	TH	1-2	Emerging distributed systems and challenges for services engineering	Hong-Linh Truong
2018-07-12	TH	3-4	Lab on identifying scenarios (requirements, datasets, business models)	Hong-Linh Truong, Liang Zhang, students
2018-07-12	TH	6-7	The role of IoT, Cloud systems, Blockchain and Machine Learning as a service	Hong-Linh Truong
2018-07-12	TH	8-9	Lab on identifying application-specific services and platform services, presentation of scenarios and services	Hong-Linh Truong, Liang Zhang, students
2018-07-13	FR	1-2	Data-as-a-Service, Data marketplace, data lakes: Models, Data Concerns, and Engineering	Hong-Linh Truong
2018-07-13	FR	3-4	Big data service systems: Models, Elasticity, and Platforms	Hong-Linh Truong
2018-07-13	FR	6-9	Lab on data services, big data processing, elastic model for data, data concerns.	Hong-Linh Truong, Liang Zhang, students
2018-07-16	MO	1-4	Algorithms & Quality-aware Data Analytics	Hong-Linh Truong
2018-07-16	MO	6-9	Lab on elasticity model, algorithms & Quality-aware Data Analytics models	Hong-Linh Truong, Liang Zhang, students
2018-07-17	TU	1-4	Human-machine in advanced services	Hong-Linh Truong
2018-07-17	TU	6-9	Lab on human-machine integration, incident management with human-tasks.	Hong-Linh Truong, Liang Zhang, students
2018-07-18	WE	1-3	Mini project presentation, demonstration and discussion	Students, Hong-Linh Truong, Liang Zhang
2018-07-18	WE	4	Ensembles of IoT, Network Functions and Clouds: Requirements, Models and Engineering Analytics	Hong-Linh Truong
2018-07-18	WE	6-9	Final exam. Recap	Students, Hong-Linh Truong, Liang Zhang

教学设备或选课学生需具备基础知识等特殊要求： prior knowledge and other special requirements for teaching

The course will be limited to max 20 students. It is expected that students have good knowledge and experience with cloud computing and web services. The recommended programming languages are Java/Python or NodeJS. Students are required to publish the mini project into open source platforms (e.g., github) with documents in English.

Working language: English

课程负责教师签名：signature of corresponding professor (maybe my name)

日期：

若此 FIST 课程为新开设的研究生课程[3]，请继续填写以下内容

课程性质	**硕士生**：□学位基础课 □学位专业课 √专业选修课　　**博士生**：□学位基础课 □学位专业课 √专业选修课

考核方式（√考试　□考查）及要求 Assessment methods (- examination? - research report) and scoring rules

Report (cumulative assignments): 50 points

Mini project (prototype and presentation): 30 points

Oral exam: 20 points

Mapping: based on Fudan grading system

(https://abroad.uconn.edu/wp-content/uploads/sites/1729/2017/08/UCONNGrading_Credit-Scales2016-17_FINAL-4.pdf)

教材及主要参考书目、文献与资料 Textbook, or references

There is no text book. The list of references is provided in the course.

Further information can be found at: http://www.infosys.tuwien.ac.at/teaching/courses/ase/

学位评定分委员会/院系教学指导委员会审核意见：

学位评定分委员会/院系教学指委员会负责人签名：　　　　　　　　日期：

课程编号（研究生院填写）