

Some Experience on Research Supervision for Postgraduate Students

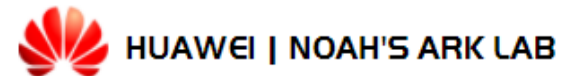
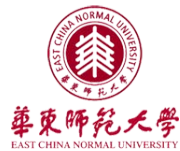
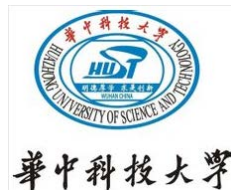
Jianliang Xu

Department of Computer Science

April 2018

My 🌹🌹🌹 Garden

- 14 PhD and PostDoc students
- 5 MPhil students



Story #1: Shen Gao

- Undergraduate in our department (2006 – 2010)
 - Summer research + FYP
 - **New database design** exploiting emerging storage technology
 - Implemented a **prototype** in an open-source database
 - Published a **research demo paper** in a major int'l conference
- Awards
 - **Bronze Prize** in the 2010 Amway Pan-Pearl River Delta Region Universities IT Project Competition
 - **First Class Prize** in the 12th National Challenge Cup Contest, 2011



Story #1: Shen Gao (Cont'd)

- Continued research journey in MPhil (2010-2013)
 1. FD-Buffer: A Cost-Based Adaptive Buffer Replacement Algorithm for Flash Memory Devices (*IEEE Transactions on Computers*)
 2. PCMLogging: Optimizing Transaction Logging and Recovery Performance with PCM (*IEEE Transactions on Knowledge and Data Engineering*)
 - Collaborated with **University of Kaiserslautern, Germany**
 3. Real-Time In-Memory Checkpointing for Future Hybrid Memory Systems (*ACM Int'l Conf. on Supercomputing*)
 - Collaborated with **Nanyang Technological University, Singapore**
- Furthered PhD in **University of Zurich**, Switzerland (2013 - 2017)
- Joined **Google (Zurich)** as Software Engineer (2018 -)



#1: Be alert to new developments in related fields (to define new problems)

#2: Exchange helps in widening students' academic and cultural horizons

Story #2: Qian Chen

- **Background**

- BSc in Computer Science from **East China Normal University** (2007-2011)
- **42nd place in World Finals of ACM-ICPC Programming Contest**

- **Research map (2011-2015)**

- **2012**: Authenticating Location-based Services, **ACM SIGMOD** (3rd author)
- **2013**: VERDICT: Privacy-Preserving Authentication, **IEEE ICDE** (2nd author)
- **2014**: Authenticating Top-k Queries, **PVLDB** (1st author)
- **2015**: Authenticated Data Integration Services, **ACM SIGMOD** (1st author)
- **Beyond**: **IEEE TKDE** (3rd author), **IEEE TKDE** (2nd author), **IEEE TMC** (2nd author)

- **Careers after graduation**



#3: Get started by participating in senior's research and go deeper and wider

Road to Publication



经过2次被拒，16个版本修改，终于收到PVLDB的通知“we are delighted to accept it for publication in PVLDB Vol. 7” 🙌 非常感谢一年多老师们的悉心教诲@徐建良Jianliang @林欣_alex, 组员@哲仔_ @小牛cow2012 @DingmingWu @磊磊磊要加油了的建议和鼓励, 还有@marialocks 大家加油好运!!!

7月6日 23:11 来自新浪微博

👍(7) | 轉發(19) | 收藏 | 評論(40)

• Version #1: Privacy-Preserving Authentication of kNN Queries

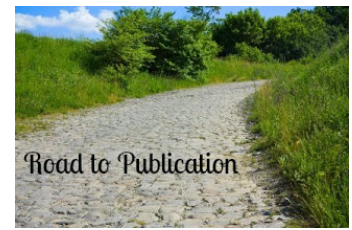
Review comments:

- Techniques not novel
- Problem not adequately motivated
- Security not formally analyzed
- Limited experimental evaluation

Revisions:

- Better writing for clarification of novel contributions
- Extended to top-k queries
- More security discussions
- Enhanced experimental evaluation

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• Version #2: Privacy-Preserving Authentication of Top-k Queries

Review comments:

- No formal security model
- Continuous privacy problem
- PPB method is not correct



Revisions:

- Introduction of a formal security model — *semantic security of rank values*
- A query admission scheme for continuous queries
- Fixed the problem in PPB method

#4: Never give up and offer advices for improvement if a paper gets rejected



Story #3: Jingjing Chen

• Background

- BEng in Computer Science from China Jiliang University
- **Strong in system building** but relatively weak in theoretical analysis

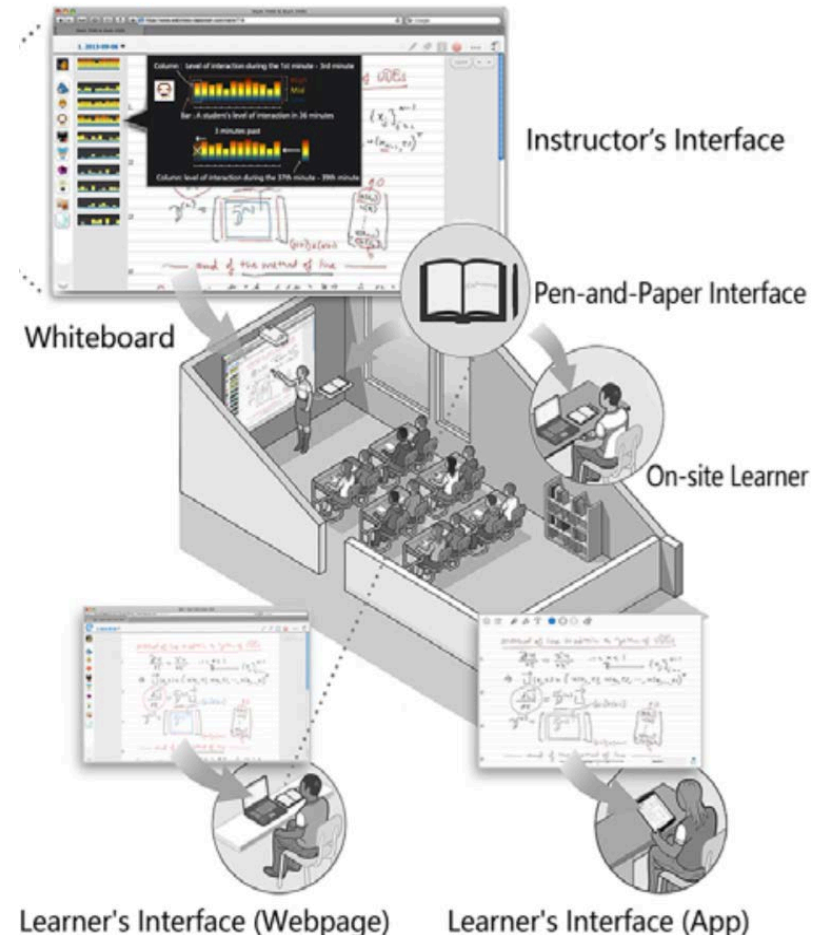
• Research topic

- Enhancing student engagement and interaction in e-learning environments

• Web-Intera Classroom

- Leveraging **HCI** and **Big Data** technologies
- Published in ***Interactive Learning Environments***, a top journal of educational research
- Transformed into **eBanshu**, an online education platform with **50,000 active users** in HK and Mainland China

Web-Intera Classroom



#5: Identify research topic that fits student's strength and interest

Summary – BEGIN++

- **B**e alert to new developments in related fields (to define new problems)
- **E**xchange helps in widening students' academic and cultural horizons
- **G**et started by participating in senior's research and go deeper and wider
- **I**dentify research topic that fits student's strength and interest
- **N**ever give up and offer advices for improvement if a paper gets rejected

- ++ **Work hard** to find the best students to work with you
 - Promote your research and build up reputation
 - Collaborate, publish, talk, service