

VIVEK SHAH

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EDUCATION

- Ph.D., Computer Science (Database Systems)** Apr 2013 – Jul 2017
University of Copenhagen Denmark
Dissertation: *Exploration of a Vision for Actor Database Systems*
Advisors: Marcos Antonio Vaz Salles and Fritz Henglein
- Master of Science, Computer Science** Aug 2010 – Nov 2012
University of Copenhagen Denmark
Specialization: Programming Language and Systems
Dissertation: *Adaptive Auto-Partitioning in Distributed Transaction based Data Storage Models*
- Master of Science, Computer Science** Aug 2011 – Feb 2012
ETH Zurich Switzerland
Semester exchange with University of Copenhagen (Erasmus Exchange Program)
- Bachelor of Technology, Computer Science & Engineering** Aug 2004 – Jun 2008
National Institute of Technology (NIT), Hamirpur India
Dissertation: *A Protocol for Secure and Fast Message Exchange in P2P Networks*

APPOINTMENTS

- University of Copenhagen** Nov 2017 - Present
Postdoctoral Researcher Denmark
- University of Copenhagen** Apr 2013 – Jul 2017
Ph.D. Fellow Denmark
- Microsoft Research** Jun 2015 – Sep 2015
Research Intern Redmond, USA
Manager: Philip A. Bernstein
- Belzabar Software Design** Aug 2008 – Jul 2010
Computer Scientist & Deputy Team Lead New Delhi, India
Manager: David Bodnick
- Tata Institute of Fundamental Research (HBCSE)** May 2007 – Jul 2007
Research Intern Mumbai, India
Manager: Nagarjuna G.

PUBLICATIONS

Refereed

- **Vivek Shah** and Marcos Antonio Vaz Salles. "Reactors: A Case for Predictable, Virtualized Actor Database Systems". In Proceedings of the 2018 ACM International Conference on Management of Data (**SIGMOD**), Houston, USA.
- Phil Bernstein, Sebastian Burckhardt, Sergey Bykov, Jose Faleiro, Gabriel Kliot, Alok Kumbhare, Muntasir Raihan Rahman, **Vivek Shah**, Adriana Szekeres and Jorgen Thelin. "Geo-Distribution of Actor-Based Services". In Proceedings of the 2017 ACM International Conference on Object-oriented Programming Systems Languages and Applications (**OOPSLA**), Vancouver, Canada.
- Vivek Shah. "Transactional Partitioning: A New Abstraction for Main-Memory Databases". In Proceedings of 2014 Very Large Databases (**VLDB**) PhD workshop, Hangzhou, China. **Awarded best paper runner-up**

Technical Reports

- **Vivek Shah** and Marcos Antonio Vaz Salles. "Actor-Relational Database Systems: A Manifesto". Pre-print available at CoRR abs/17707.06507. *Under Review*

AWARDS AND HONORS

- Awarded best paper runner up at VLDB 2014 Ph.D. workshop in Hangzhou, China.
- Awarded Computer Science (DIKU) Departmental Fellowship for Ph.D. studies at University of Copenhagen.
- Awarded Danish Governmental Scholarship for M.Sc. studies at University of Copenhagen.
- Awarded Erasmus scholarship for exchange studies at ETH Zurich.
- Secured second rank in the Department of Computer Science, National Institute of Technology (NIT), Hamirpur on completion of undergraduate studies (B.Tech).

RESEARCH PROJECTS

- **REACTDB** is a scalable high-performance database system that targets modern hardware and enhances their programmability by integrating the concepts of actor programming model and relational data model. My Ph.D. dissertation developed the *vision* for the project and built the *system* from scratch. Multiple research directions are currently being pursued in the project where the design of classical database system components e.g., concurrency control, logging, index-management, distribution and deployment are being redesigned in light of the integration.
- **Microsoft Orleans** is a distributed, virtual actor run-time designed to build scalable, stateful applications in .NET. My research internship at Microsoft Research helped in adding support for *geo-distribution in Orleans*.
- **Snapper** is a work in progress library designed to provide drop-in transactional support over virtual actor run-times that provides high performance and scalability by leveraging application semantics.
- **Dolphin** is a work in progress scalable *actor-oriented database* augmented with spatial and reactive programming capabilities designed to aid construction of location based moving object applications.

TEACHING & MENTORING EXPERIENCE

Teaching Roles at University of Copenhagen

- **Computer Systems**, *Co-lecturer* Fall 2016 – 2018
- **Advanced Java**, *Co-lecturer* Fall 2013 – 2018
- **Advanced Computer Systems**, *Teaching Assistant* Fall 2013 – 2016
- **Advanced Computer Systems**, *Teaching Assistant* Fall 2013 – 2016
- **Advanced Algorithms and Data-structures**, *Teaching Assistant* Spring 2012
- **Algorithms and Data-structures**, *Teaching Assistant* Spring 2012
- **Databases and Web-programming**, *Teaching Assistant* Spring 2011

Mentoring Roles at University of Copenhagen

Co-supervised 7 M.Sc. thesis students and 4 B.Sc. thesis students in the area of database systems.

SERVICE & LEADERSHIP

- External Reviewer for SIGMOD 2015, IEEE eScience 2014, PACT 2015.
- Fedora Package Maintainer. 2008 – 2010
- Member, GNU/Linux User Group, NIT Hamirpur. 2006 – 2008
- Core Coordinator, Nimbus, Annual Technical Festival, NIT Hamirpur. 2007
- Editor, Srijan, Annual University Magazine, NIT Hamirpur. 2006 – 2007
- Coordinator, Hillffair, Annual Cultural Festival, NIT Hamirpur. 2006 – 2007

LANGUAGES

English - Fluent; Hindi, Bengali - Native; German, Danish - Beginner

REFERENCES

Available upon request.