

# Thomas Pasquier

thomas.francis.pasquier@gmail.com

Department of Computer Science  
University of Bristol  
Merchant Venturers Building  
75 Woodland Road  
Bristol BS8 1UB  
United Kingdom

## Academic Experience

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| 2018–present | <b>Lecturer (Assistant Professor)</b> at University of Bristol<br>I am a permanent Lecturer (equivalent to US Assistant Professor) in the Cyber-security Group at the University of Bristol.   |
| 2017–2018    | <b>Research Associate</b> at University of Cambridge<br>I was a Research Associate in the Digital Technology Group. I work on the applications of digital provenance. My work is funded from industry donations and I am involved in a DARPA grant.  |
| 2016–2017    | <b>Postdoctoral Fellow</b> at Harvard University<br>I was a Postdoctoral Fellow at the Center for Research on Computation and Society. I worked on grant NSF SSI-1450277 <i>Collaborative Research: Bringing End-to-End Provenance to Scientists</i> and NSF ACI-1448123 <i>Citation++: Data Citation, Provenance, and Documentation</i> . |
| 2013–2016    | <b>Graduate Research Assistant</b> at University of Cambridge<br>I worked as a research assistant under the EPSRC EP/K011510 CloudSafetyNet grant.   |

## Fellowships

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| 2018 - present | <b>Research Fellow</b><br>St Edmund's College, University of Cambridge                           |
| 2016 - 2017    | <b>Postdoctoral Fellow</b><br>Center for Research on Computation and Society, Harvard University |

## Education

2012–2016	<b>PhD in Computer Science</b> Dissertation: <i>“Towards practical information flow control and audit”</i> University of Cambridge, United Kingdom
2011–2012	<b>MPhil in Computer Science</b> Distinction Dissertation: <i>“Prevention of Identity Inference in De-Identified Medical Records”</i> University of Cambridge, United Kingdom.
2008 – 2011	<b>Diplôme d’Ingénieur in Software R&amp;D</b> Examining comity praise (Félicitation du jury) Institut Supérieur d’Électronique de Paris, France
2006 – 2008	<b>Diplôme Universitaire de Technologie in EEE</b> Examining comity praise (Félicitation du jury) Conservatoire National des Arts et Métiers, France

## Teaching Experience

2016-2018	<b>Operating Systems</b> at University of Cambridge I supervised the Part IA (first year undergraduate) Operating Systems course.
2017	<b>Undergraduate Mentorship</b> at University of Cambridge I mentored Part II (final year undergraduate) students projects.
2016-2017	<b>Graduate Mentorship</b> at Harvard University I mentored PhD students, these interactions led to several publications.
2016-2017	<b>Undergraduate Mentorship</b> at Harvard University I mentored undergraduate students research projects and internships.
2012–2016	<b>Concurrent and Distributed Systems</b> at University of Cambridge I supervised the Part IB (second year undergraduate) Concurrent and Distributed Systems course.
2013–2016	<b>GCSE, A-level in Computing</b> at Cambridge Centre for Sixth-form Studies I was a teacher in a high-school where I taught students aged 15-19 preparing GCSE, As-level and A-level Computer Science.

## Industry Experience

2012	<b>R&amp;D Software Engineer at Public Health England</b> , Cambridge I worked on building a secure prototype web portal to allow brain tumour patients and their carers to access medical records online.
2008–2011	<b>R&amp;D Software Engineer</b> at Gemalto, Paris I worked in Gemalto’s main R&D department on smartcard-backed online identity, in use cases for government agencies, an international Telecom company and a large UK bank. I also participated in the development of a debugging tool for remote e-passport application for the Australian government.
2006–2008	<b>R&amp;D Electronic Engineer</b> at SRETT, Paris I started as an electronic engineer building and designing a prototype for a wireless sensor network. My job scope quickly moved to embedded software engineering for micro-controllers. I also designed and programmed an automated “out of factory” test bench for medical wireless sensors.

## Research Projects

2016–present	<b>NSF End-to-end Provenance</b> End-to-end Provenance is a collaboration between the Harvard School of Engineering and Applied Science, and Harvard Forest. The project aims to leverage provenance tools to help the reproduction and authentication of scientific results.
2016–2017	<b>NSF Citation++</b> Citation++ is a collaboration between the Harvard School of Engineering and Applied Science, and Harvard Institute for Quantitative Social Science. The project aims to integrate provenance support in the <i>dataverse</i> open-source data repository platform developed at Harvard and used by more than 25 academic institutions around the world.
2014–present	<b>Microsoft Cloud Computing Research Centre (MCCRC)</b> The Microsoft Cloud Computing Research Centre (MCCRC) is a virtual research centre in which technology lawyers and computer scientists are working collaboratively on research challenges in cloud computing where technology and regulation intersect. This collaboration involves the Cloud Legal Project at the Centre for Commercial Law Studies, Queen Mary University of London and the University of Cambridge Computer Laboratory.
2013–2016	<b>EPSRC CloudSafetyNet</b> CloudSafetyNet is a collaboration between the University of Cambridge, Computer Laboratory and Imperial College London, Department of Computing. The project aims to rethink fundamentally how Platform-as-a-Service (PaaS) clouds should handle security by exploring the use of Information Flow Control.
2008–2011	<b>Federation des Cercles de Confiance (FC2)</b> FC2 is a French government founded research project around digital identity, smartcards and online payments. It involved industrial (Gemalto, Orange, Atos, EADS) and academic (CNAM, ENSI Caen, Telecom Paris-Sud) partners. Applications ranged from a secure login for police officers, online payments and registration to government services (schools, local government social actions).

## Publications

### Journal & Magazine Articles

- PASQUIER, T., LAU, M., HAN, X., FONG, E., LERNER, B., BOOSE, E., CROSAS, M., ELLISON, A., AND SELTZER, M. Sharing and Preserving Computational Analyses for Posterity with encapsulator. *IEEE Computing in Science and Engineering (CiSE)* (accepted)
- PASQUIER, T., SINGH, J., POWLES, J., EYERS, D., SELTZER, M., AND BACON, J. Data provenance to audit compliance with privacy policy in the Internet of Things. *Springer Personal and Ubiquitous Computing* (2018)
- PASQUIER, T., LAU, M., TRISOVIC, A., BOOSE, E., COUTURIER, B., ELLISON, A., GIBSON, V., JONES, C., AND SELTZER, M. If these data could talk. *Nature Scientific Data* (2017)
- SINGH, J., PASQUIER, T., BACON, J., KO, H., AND EYERS, D. Twenty Cloud Security Considerations for Supporting the Internet of Things. *IEEE Internet of Things Journal* (2016)
- PASQUIER, T., SINGH, J., EYERS, D., AND BACON, J. CamFlow: Managed Data-Sharing for Cloud Services. *IEEE Transactions on Cloud Computing* (2015)
- SINGH, J., POWLES, J., PASQUIER, T., AND BACON, J. Data Flow Management and Compliance in Cloud Computing. *IEEE Cloud Computing Magazine* (2015)
- BACON, J., EYERS, D., PASQUIER, T., SINGH, J., PAPAGIANNIS, I., AND PIETZUCH, P. Information Flow Control for Secure Cloud Computing. *IEEE Transactions on Network and System Management, SI Cloud Service Management* 11, 1 (2014), 76–89

### Conference Papers

**In Computer Science conferences papers go through a full peer review process.**

- PASQUIER, T., HAN, X., MOYER, T., BATES, A., HERMANT, O., EYERS, D., BACON, J., AND SELTZER, M. Runtime analysis of whole-system provenance. In *Conference on Computer and Communications Security (CCS'18)* (2018), ACM
- PASQUIER, T., HAN, X., GOLDSTEIN, M., MOYER, T., EYERS, D., SELTZER, M., AND BACON, J. Practical whole-system provenance capture. In *Symposium on Cloud Computing (SoCC'17)* (2017), ACM
- PASQUIER, T., EYERS, D., AND BACON, J. PHP2Uni: Building Unikernels using Scripting Language Transpilation. In *International Conference on Cloud Engineering (IC2E'17)* (2017), IEEE
- SINGH, J., PASQUIER, T., BACON, J., DIACONU, R., POWLES, J., AND EYERS, D. Big Ideas paper: Policy-driven middleware for a legally-compliant Internet of Things. In *ACM/IFIP/Usenix Middleware* (2016), ACM
- PASQUIER, T., BACON, J., SINGH, J., AND EYERS, D. Data-centric access control for cloud computing. In *Symposium on Access Control Models and Technologies* (2016), ACM
- PASQUIER, T., SINGH, J., , BACON, J., AND EYERS, D. Information Flow Audit for PaaS clouds. In *International Conference on Cloud Computing Engineering (IC2E)* (2016), IEEE
- PASQUIER, T., SINGH, J., AND BACON, J. Clouds of Things need Information Flow Control with Hardware Roots of Trust. In *International Conference on Cloud Computing Technology and Science (CloudCom'15)* (2015), IEEE
- PASQUIER, T., SINGH, J., BACON, J., AND HERMANT, O. Managing Big Data with Information Flow Control. In *International Conference on Cloud Computing (CLOUD)* (2015), IEEE

SINGH, J., PASQUIER, T., AND BACON, J. Securing Tags to Control Information Flows within the Internet of Things. In *International Conference on Recent Advances in Internet of Things (RIoT'15)* (2015), IEEE

SINGH, J., PASQUIER, T., BACON, J., AND EYERS, D. Integrating Middleware with Information Flow Control. In *International Conference on Cloud Computing Engineering (IC2E)* (2015), IEEE

PASQUIER, T., BACON, J., AND EYERS, D. FlowK: Information Flow Control for the Cloud. In *International Conference on Cloud Computing Technology and Science (CloudCom'14)* (2014), IEEE

PASQUIER, T., BACON, J., AND SHAND, B. FlowR: Aspect Oriented Programming for Information Flow Control in Ruby. In *International Conference on Modularity* (2014), ACM

PASQUIER, T., SHAND, B., AND BACON, J. Information Flow Control for a Medical Web Portal. In *e-Society 2013* (2013), IADIS

## Workshop Papers

**In Computer Science workshop papers go through a full peer review process.**

HAN, X., PASQUIER, T., AND SELTZER, M. Provenance-based intrusion detection: Opportunities and challenges. In *Workshop on the Theory and Practice of Provenance (TaPP'18)* (2018), USENIX, USENIX

HAN, X., PASQUIER, T., RANJAN, T., GOLDSTEIN, M., AND SELTZER, M. FRAPPuccino: Fault-detection through Runtime Analysis of Provenance. In *Workshop on Hot Topics in Cloud Computing (HotCloud'17)* (2017), USENIX

PASQUIER, T., SINGH, J., AND BACON, J. Information Flow Control for Strong Protection with Flexible Sharing in PaaS. In *IC2E, International Workshop on Future of PaaS* (2015), IEEE

PASQUIER, T., AND POWLES, J. Expressing and Enforcing Location Requirements in the Cloud using Information Flow Control. In *IC2E International Workshop on Legal and Technical Issues in Cloud Computing (Claw'15)* (2015), IEEE

## Technical Reports

PASQUIER, T. Towards practical information flow control and audit. Tech. Rep. UCAM-CL-TR-893, University of Cambridge, Computer Laboratory, July 2016

SINGH, J., BACON, J., CROWCROFT, J., MADHAVAPEDDY, A., PASQUIER, T., HON, W. K., AND MILLARD, C. Regional Clouds: Technical Considerations. Tech. Rep. UCAM-CL-TR-863, University of Cambridge, Computer Laboratory, 2014

SMADJA, P., AND PASQUIER, T. eID - STS, Reading eID Smartcard Attributes to Generate Proven Identity. Tech. rep., Gemalto, FC2 Consortium, 2010

SMADJA, P., AND PASQUIER, T. GTK Selector, Enables Generic Smartcard Authentication. Tech. rep., Gemalto, FC2 Consortium, 2010

## Invited Talks

08 Jan 2018 | **Towards practical whole-system provenance**, University of Edinburgh  
Institute for Computing Systems Architecture Colloquium

## Service

### Program committee

2018	IEEE International Workshop on Legal and Technical Issues in Cloud Computing and the Internet of Things
2017	USENIX Workshop on Theory and Practices of Provenance
2017	ACM Workshop on Middleware and Applications for the Internet of Things
2017	IEEE International Workshop on Legal and Technical Issues in Cloud Computing and the Internet of Things
2017	ACM International Workshop on Mashups of Things and APIs
2016	IEEE International Workshop on Legal and Technical Issues in Cloud Computing and the Internet of Things
2016	ACM International Workshop on Mashups of Things and APIs

### Organizing Committee

2018	Provenance-based Security Workshop
2017	IEEE International Conference on Cloud Engineering

### Journal Reviews

ACM Transactions on the Web
IEEE Transactions on Cloud Computing
Elsevier Future Generation Computer Systems
Elsevier Computer Standards & Interfaces
MDPI Sensors

### Grant Reviews

Luxembourg national research fund (FNR)
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