

# Dr Mischa Moussavian Tuffield

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## Summary

I am a strategically minded creative technologist, who strives to help businesses achieve their true potential by harnessing cutting edge technology to solve product needs. I am CTO of State, a \$14m venture backed startup. I was brought in to lead a 25+ person product and engineering team, and to define and implement a technology vision for the company. Prior to State I was central in building two startups, Garlik & PeerIndex, both of which were acquired for their technological advances.

I hold a PhD from the University of Southampton supervised by Professor Sir Nigel Shadbolt (now Principal of Jesus College, Oxford), and an AI degree from Edinburgh University. I remain active in the research community and participate on Programme Committees for the top international conferences.

I am passionate about the future of an open web. I have had the pleasure of working with Sir Tim Berners-Lee in two of the three startups I have been involved in and have been an active member of the World Wide Web Consortium (W3C). The W3C is an international community that develops open standards to ensure the long-term growth of the Web. I have contributed to the long term future of the web by participating in the W3C's RDF Working Group in the design of the Turtle specification, and co-edited the W3C's Social Web XG's Report entitled: "A Standards-based, Open and Privacy-aware Social Web".

## Experience

**CTO - State** <https://state.com/>

**Apr '14 - present**

- A key member of the executive team setting strategic direction and defining key business metrics whilst overseeing technology and product development. State is an intelligent opinion network that makes use of novel technologies to organise the world's opinions. At State I was chosen to team up with Alex Asseily, founder of Jawbone, and Sir Tim Berners-Lee ([amongst others](#)) to create one of the most powerful and innovative Semantic platforms by fusing a rich Topic Graph with state of the art Natural Language Processing techniques to power a fully functional mobile-first social network. Upon analysis of State's user base it became apparent that users who received notifications from other people within the network within their first 48 hours on the platform were seven times more likely to become long term users. It was this key user retention metric that drove the innovations in State's semantic technology.
- Brought Product & Engineering together into one team focused on delivering against key business metrics. Performed a large redesign of the system architecture removing bloat and ensuring that the team focused on solving the right problems and ensuring that the team didn't reinvent the wheel. Furthermore I moved the platform towards an efficient SOA architecture whilst speeding up product iteration cycles and saving on operational costs by putting in place a DevOps framework.

**CTO - PeerIndex** <http://www.peerindex.com/>

**Apr '13 - Apr '14**

- As CTO of PeerIndex I led the design and development of a world-class big-data platform that processed 10% of the Twitter firehose, in real-time, by applying our model for measuring influence to show how messages were spreading around the social web. I led and helped form the team of engineers and data scientists who turned this novel dataset into a valuable insights product for marketers. PeerIndex exited to Brandwatch in 2014.
- Pivotal to PeerIndex's success was the flexibility and power of the data warehouse created, which housed a 3 month rolling window of processed Twitter data. The flexibility enabled PeerIndex to find product market fit in the data insights space in record time. At PeerIndex the big data platform made use of Hadoop, Hive, Pig

and Amazon's Redshift for batch processing and used Storm for real-time analytics to extract insights from a dataset of 200 million users.

#### **Head of Research Engineering - PeerIndex** **Dec '11 - Apr '13**

- Whilst heading up the Data Engineering team at PeerIndex, I was responsible for design and development of its Big Data stack, the implementation of the Influence Model, its APIs, and other backend technologies.

#### **Senior Research Engineering - Garlik** <http://www.garlik.com/> **Aug '08 - Dec '11**

- A key member Garlik's engineering team that spun out of Southampton University. I helped develop Garlik's core Semantic Web technologies that powered its fintech product DataPatrol. Garlik's technology still makes up one of the key components of Experian's CreditExpert (acquired in 2011) and it is the single largest Semantic Technology system in production in the world, serving over 10 million people in the UK.

## **Education**

#### **Doctor of Philosophy - University of Southampton** **Oct '04 - Oct '10**

*Title* Telling Your Story: Autobiographical Metadata and the Semantic Web.  
*Supervisors* Professor Sir Nigel R. Shadbolt & Dr David E. Millard

#### **MSc in Artificial Intelligence - University of Edinburgh** **Oct '03 - Oct '04**

#### **BSc in Software Engineering - Oxford Brookes University** **Sep '98 - Jun '02**

#### **International Baccalaureate - Tehran International School** **Sep '96 - Jun '98**

## **Other Positions Held**

#### **Member/Co-Editor of the World Wide Web Consortium Social Web Incubator Group** **Apr '09 - Dec '10**

#### **Member of the World Wide Web Consortium RDF Working Group** **Feb '11 - Jan '12**

#### **Member of the World Wide Web Consortium** **Aug '08 - Jun '12**

#### **Visiting Researcher, University of Southampton** **Oct '07 - Oct '10**

#### **Member of EPSRC Memories for Life Research Network** **Dec '06 - Feb '09**

#### **Co-Organiser of London Storm Meetup** **Feb '13 - present**

#### **Co-Organiser of Web of Data Meetup** **Jul '09 - present**

#### **Technical advisor to Smesh** **Jun '15 - present**

## **Skills**

Software Architecture, System Design, SOA, Data Architecture, Engineering Leadership, Java, HTML, Bash, Javascript, Perl, SQL, RDF, SPARQL, Hadoop, Storm, \*nix, AWS, Semantic Technologies. I also speak Farsi.

## **Publications**

Harris, S., Tuffield, M. (2011) [Linked Sensitive Data](#) *Linked Enterprise Data Patterns Workshop at the W3C*.

Tuffield, M. (2010) [Telling Your Story: Autobiographical Metadata and the Semantic Web](#) *PhD. Thesis - University of Southampton*.

Halpin, H., Tuffield, M., Appelquist, D., Brickley, D., Carvahlo, M., Iannella, R., Passant, A., Perey, C., Story, H. (2010) [W3C Social Web Incubator Group \(SWXG\) Final Report](#) *W3C Incubator Group*

Harris, S., Ilube, T. and Tuffield M. (2010) [Enterprise Linked Data as Core Business Infrastructure](#) in book [Linking Enterprise Data](#)

O'Hara, K., Tuffield, M. and Shadbolt, N. (2009) [Lifelogging: Privacy and Empowerment with Memories for Life](#). *Identity in the Information Society*, 1 (2).

Potter, S., Kalfoglou, Y., Alani, H., Bachler, M., Buckingham Shum, S., Carvalho, R., Chakravarthy, A., Chalmers, S., Chapman, S., Hu, B., Preece, A., Shadbolt, N., Tate, A. and Tuffield, M. (2007) [The Application of Advanced Knowledge Technologies for Emergency Response](#). In: *4th International Information Systems for Crisis Response and Management (ISCRAM 07)*, May 2007, Delft, The Netherlands.

Dupplaw, D., Croitoru, M., Loizou, A., Dasmahapatra, S., Lewis, P., Tuffield, M. and Xiao, L. (2007) [Multimedia Markup Tools for OpenKnowledge](#). In: *1st Workshop on Multimedia Annotation and Retrieval enabled by Shared Ontologies*, 5th December 2007, Genoa, Italy.

Tuffield, M., Harris, S., Dupplaw, D. P., Chakravarthy, A., Brewster, C., Gibbins, N., O'Hara, K., Ciravegna, F., Sleeman, D., Wilks, Y. and Shadbolt, N. R. (2006) [Image annotation with Photocopain](#). In: *First International Workshop on Semantic Web Annotations for Multimedia (SWAMM 2006) at WWW2006*, May 2006, Edinburgh, United Kingdom.

Tuffield, M. M., Millard, D. E. and Shadbolt, N. R. (2006) [An Investigation into Automatically Captured Autobiographical Metadata, and the Support for Autobiographical Narrative Generation](#). Mini-Thesis: PhD upgrade report. Technical Report UNSPECIFIED, Electronics and Computer Science, University of Southampton.

Tuffield, M. M., Millard, D. E. and Shadbolt, N. R. (2006) [Ontological Approaches to Modelling Narrative](#). In: *2nd AKT DTA Symposium*, January 2006, AKT, Aberdeen University.

Tuffield, M. M., Dupplaw, D. P., O'Hara, K., Shadbolt, N. R., Chakravarthy, A., Brewster, C., Ciravegna, F. and Wilks, Y. (2006) [Photocopain - Annotating Memories For Life](#). In: *Memories for Life: The Future of our Pasts*, 12/12/06, British Library.

Tuffield, M. M., Loizou, A., Dupplaw, D., Dasmahapatra, S., Lewis, P. H., Millard, D. E. and Shadbolt, N. R. (2006) [The Semantic Logger: Supporting Service Building from Personal Context](#). In: *Capture, Archival and Retrieval of Personal Experiences (CARPE) Workshop at ACM Multimedia*, Oct 06, Santa Barbara.

Tuffield, M. M., Millard, D. E. and Shadbolt, N. R. (2005) [Narrative as a Form of Knowledge Transfer, Narrative Theory and Semantic: Present Challenges - Future Possibilities \(9 month Report\)](#). Technical Report UNSPECIFIED, Electronics and Computer Science, Intelligence, Agents, Multimedia.

Tuffield, M. M., Shadbolt, N. R. and Millard, D. E. (2005) [Narrative as a Form of Knowledge Transfer: Narrative Theory and Semantics](#). In: *1st AKT Doctoral Symposium*, June 2005, Milton Keynes, UK.

Lawrence, K. F., Tuffield, M. M., Jewell, M. O., Prugel-Bennett, A., Millard, D. E., Nixon, M. S., schraefel, m. c. and Shadbolt, N. R. (2005) [OntoMedia - Creating an Ontology for Marking Up the Contents of Heterogeneous Media](#). In: *Ontology Patterns for the Semantic Web ISWC-05 Workshop*, Nov 05, Galway, Ireland.

Jewell, M. O., Lawrence, K. F., Tuffield, M. M., Prugel-Bennett, A., Millard, D. E., Nixon, M. S., schraefel, m. c. and Shadbolt, N. R. (2005) [OntoMedia: An Ontology for the Representation of Heterogeneous Media](#). In: *Multimedia Information Retrieval Workshop (MMIR 2005) SIGIR*, 08/05, Brazil.

Tuffield, M. M., Millard, D. E. and Shadbolt, N. R. (2005) [Towards the Narrative Annotation of Personal Information and Gaming Environments](#). In: *Hypertext 05, Workshop on Narrative, Musical, Cinematic and Gaming Hyperstructure*, 09/05, Salzburg, Austria.

## Program Committees (Peer Reviewing)

- [1st International Workshop on Privacy in Semantic Technologies \(PriSeT 2013\)](#)
- [Making Sense of Microposts 2013 WWW'2013](#)
- [Making Sense of Microposts 2012 WWW'2012](#)
- [5th International Workshop on Linked Data on the Web WWW'2012](#)
- [First Workshop on Semantic Web Collaborative Spaces WWW'2012](#)
- [Hypertext 2012 Semantic Data Track](#)
- [9th Extended Semantic Web Conference](#)
- [W3C Workshop on Linked Enterprise Data Patterns \(2011\)](#)
- [International Semantic Web Industry Track \(ISWC2011\)](#)
- [3rd International Workshop on Social Data on the Web \(SDoW2011\) at ISWC2011](#)
- [Semantic Web in Use - 10th International Semantic Web Conference 2011](#)
- [Federated Social Web Europe Conference 2011](#)
- [W3C Workshop on Web Tracking and User Privacy 2011](#)
- [User Profile Data on the Social Semantic Web \(UWeb 2011\) at ESWC 2011](#)
- [Making Sense of Microposts \(MSM2011\) at ESWC 2011](#)
- [Linked Data on the Web \(LDOW2011\) at WWW'11](#)
- [ESWC 2011 Social Web and Web Science Track](#)
- [ESWC 2011 Linked Open Data Track](#)
- [Social Data on the Web \(SDoW2010\)](#)
- [W3C Workshop on Privacy and data usage control](#)
- [Personal Semantic Data EKAW 2010](#)
- [W3C Workshop on Privacy for Advanced Web APIs, London July 2010](#)
- [BlogTalk Galway 2010, 7th International Conference on Social Software](#)
- [Linked Data on the Web Workshop at WWW 2009](#)
- [International Semantic Web Conference Poster/Demo Session](#)
- [AAAI Spring Symposium on Linked Data Meets Artificial Intelligence \(AAAI 2010\)](#)
- [7th Extended Semantic Web Conference \(ESWC 2010\) - Web of Data Track](#)
- [7th Extended Semantic Web Conference \(ESWC 2010\) - Demo Track](#)
- [SPOT2010 2nd Workshop on Trust and Privacy on the Social and Semantic Web @ ESWC 2010](#)
- [Linked Data on the Web \(LDOW2010\) @ WWW'2010](#)
- [Hypertext and Web Science: Emergent Structures, Communities and Collective Intelligence - New Review of Hypermedia and Multimedia](#)