Adam T. Lindsay

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OBJECTIVE

A key contributor role in a dynamic organisation dealing with high-scale distributed internet architecture where I can continue to be challenged, to excel, and to help a team fulfill its potential.

KEY SKILLS

Horizontally scalable web architectures, Python, API design, Map/Reduce, NoSQL, Distributed systems, Metadata, RESTful services, Signal processing, Non-speech audio, Text processing;
Architected for cloud deployments on Joyent, AWS, RightScale, Linode;
Further experience with Objective C, Javascript (incl Node.js), HTML5, XSLT, TeX, Ruby, Perl, Erlang.

EDUCATION

PhD, Computing
Lancaster University, Lancaster, UK, final corrections accepted.
Built custom distributed audio processing environment using consistent hashing, directing multi-stage signal processing to data location. "Cloud-based conforms" in the service of creating an 'intelligent' client-server audio editing environment.
Thesis title: *Sequence & Simultaneity: Building blocks for a distributed, concurrent audio editing environment*

S.M., Media Arts and Sciences   GPA 4.5/5.0
MIT Media Lab, Cambridge, MA, September 1996
Thesis: *Using Contour as a Mid-Level Representation of Melody*

S.B., Cognitive Science   GPA 4.3/5.0
S.B., Music
Massachusetts Institute of Technology, Cambridge, MA, June 1994

EXPERIENCE

Independent Consultant   March 2005–Present
Numerous small to medium projects.
- Architected, designed and managed the implementation of a quad-like store, built on Node.js and PostgreSQL;
- Added RESTful API points to existing PHP/MySQL code base for an iOS app;
- Drove early community efforts for the Echo Nest music APIs as code contributor, educator, and company representative at first Music Hack Day (London 2009).

Chief Scientist, Co-founder   March 2010–January 2012
Social Genius, Inc., Palo Alto, CA, USA
Technical co-founder, core architect/developer, and key strategist regarding scale.
- Led the technical side of the company, managing a small team of internal and external developers;
- Developed and evolved the custom "music and social intelligence" back-end of the Social Genius platform, integrating social graph and interest graph for profiles and providing context for interactions;
- Architected the platform from rapid proof-of-concept to a high-capacity horizontally-scalable architecture capable of handling millions of users;
- Established a stable but steadily evolving RESTful API enabling multiple types of front-end clients;

- Navigated server architecture from shipping small, scalable API back end to iPhone app to a web-native social Facebook application as HTML5 App Platform pre-launch and OpenGraph launch partner;

- Integrated external API data sources (profiles, mined status updates, social connections) for unique, real-time, evolving profiling algorithms and storage.

Research Fellow   August 2003–March 2012
Research Associate   June 2000–August 2003
Lancaster University Computing Department, Lancaster, UK
Technical lead increasingly in the role of project manager for various UK- and EU-funded collaborative research projects, including:

- FIRM (2010–2012) Disruptive technologies for the future of digital media. Drove and architected distributed content management and exchange for collaborative media creation, demonstrating an architecture for hybrid publishing and authoring for audio and video. "GitHub for audio and video professionals."

- INTERSECTION (2009) Local project manager for network intrusion resilience project. Brought critically under-resourced project to timely, commended completion.

- RETRIEVE, ENTHRONE, ENTHRONE2 projects dealing with MPEG-7 metadata standardisation, applications, and trials, primarily around wide-area multimedia distribution and multi-stream CCTV multimedia systems.

- ICT Tools for Searching, Annotation, and Analysis of Audio-Visual Media (2005–2006) Multimedia metadata applications for humanities research.

Principal Investigator   October 1996–May 2000
Starlab NV/SA, Brussels, Belgium
Project design, management, and execution; Led process from proposals through resourcing and completion on EU- and Flanders region-funded research projects.

- DICEMAN – Designed & oversaw audio analysis tools (incl. melody representation, non-speech ambient audio) & standardised representation in MPEG-7.

- Conceived, managed, and delivered within ACE project, driving development of "aware autonomous multimedia" with analysis-derived micro-assets collocated with metadata for ease of manipulation.

- Conception and management of TEA (hardware sensor analysis and fusion to expose mobile phone context) project.

Research Assistant   1994–1996
Machine Listening Group, MIT Media Laboratory, Cambridge, MA

PROFESSIONAL ACTIVITIES Released open source code and hacked other projects, including:

- **Twitter Music Trends**, a real-time leader-board on what musical artists are being tweeted about, world-wide, at the moment; lovingly hand-styled in fixed-character green-on-black, dynamism provided by HTTP meta-refresh;
  Won the Echo Nest prize at Music Hack Day Barcelona 2011, deployed with minor changes for scale.

- **This is my Panda**, tongue-in-cheek "social network optimisation" for This is My Jam, providing metrics on optimal artists, dates, and times favoured by followers;
  Won the MusicMetric prize at Music Hack Day Barcelona 2012.

- **Py-SmartDC**, a Pythonic wrapper to Joyent's SmartDataCenter cloud provisioning and control API, including an independent Python implementation of the HTTP Signature crypto scheme.

- **Twitstream**, the first public Python wrapper (requiring nothing other than the Python standard library) around Twitter's streaming API exposing a simple callback-style interface;
- Other one-off or obscure utilities (e.g., **dulse**, a fast, lossy, "good-enough" XML parser that allows for a simpler, JSON-like interface to the data) and experiments available on `github.com/atl`
- `@recomme`, an early (ca. 2008) Echo Nest API-powered Twitter chat bot providing music recommendations;
- **Paradiddle**, a Mac frontend to Pd that enables creation of a GUI for Pd in Interface Builder without the need for writing any Mac OS X code.

Contributed to many open-source projects, including:
- **Pd** (Pure Data): adapt the generic GUI to be more Mac-like in its early days of Mac OS X compatibility & maintained a more native installer for a while;
- Assorted GitHub-based projects: **Redish** (Pythonic Redis abstraction layer), **atlas-client** (broadcast media search API); **MusicMetric** (social media and darknet sharing statistics) Python API client;
- Numerous new features throughout **Echo Nest Remix** API, including content navigation, improved content upload and cache detection, and a new audio rendering engine.

Extensive MPEG-7 leadership and contributions, including:
- Co-editor, ISO/IEC 15938-4 (**MPEG-7 Audio**);
- Co-editor ISO/IEC 15938-1 (**MPEG-7 Systems**);
- Chair MPEG-7 Audio Ad Hoc Group July 1998–July 2001;
- Co-author of numerous supporting documents, including the MPEG-7 Applications Document & BSI's "Implementors' Guide to the MPEG Standards," (1997–2003).

Numerous other professional contributions, including:
- European Commission project reviewer;
- PhD referee;
- Mentored/advised on wide range of university project courses ranging from an interactive music technology undergraduate project course to a management-computing Masters course on e-Innovation;
- Numerous academic publications (list available on request).