

Greg Detre

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Keynote speaker, podcast host, blog author

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TODO Memrise adaptive learning algorithms

The Multi-voxel pattern analysis (MVPA) toolbox (2005-2010, scientific, open source)

Emacs Freex mode (2005-2007, open source, personal)

Employment

Greg Detre Consulting (2019-)

Rehearsable.ai (2023-), co-founder

Filtered - Chief Product & Technology Officer (2021-2022), Board Observer (2023-)

Channel 4 - Chief Data Scientist (2016-2019)

Big Health/Sleepio - Chief Technology Officer (2014-2016)

The Guardian - Consultant senior data scientist (2013)

Memrise.com co-founder, Chief Technology Officer (2008-2012; 2022)

Research & teaching

Summary

Bio

Co-founder of Memrise.com: now a global brand, with 70m users, awarded overall Best App in the 2017 Google Play Awards, and TIME's #2 EdTech company of 2024.

Education:

- First Class Honours from Oxford University, and a prestigious Frank Knox Fellowship to study at Harvard.
- During his PhD from Princeton University on the computational neuroscience of human memory & forgetting, he led the development of an open source multivariate analysis toolbox for fMRI data used by hundreds of labs around the world, wrote an Emacs mode used by exactly one person in the world, and was awarded a prize in DARPA's international competition to read minds with machine learning.

Experienced startup C-suite leader and full-stack software engineer and data scientist:

- as a consultant, helped The Guardian build their original data analytics infrastructure;
- as CTO launched Big Health's best-in-class Sleepio digital mental health mobile app (featured by Apple as part of iOS 8 launch, reached #3 US iTunes Health & Fitness);
- as Chief Data Scientist at Channel 4, led on a flurry of new and prize-winning data products, winning the DataIQ 2019 'Best data and analytics team'.

Consults for fast-growing startups as an advisor/coach:

- led development of the world's first generative AI language learning coach (in early 2022) for Memrise, used in millions of conversations;
- and helped many fast-growing startups build stronger technology teams and AI products (from content moderation, to fabric designs, to fintech).

Education

Princeton University (2004-2010)	PhD - Psychology & Neuroscience
Harvard University (2002-2003)	visiting graduate student , <u>Frank Knox Fellowship</u> , studying AI
Oxford University (1999-2002)	BA (1st-class Honours) - Philosophy, Psychology & Physiology

Employment

Memrise.com (2008-2012; 2022)	Co-founder of Memrise.com , now 70m users and a global brand (e.g. TIME world #2 EdTech company of 2024 , overall Best App of Google Play Award 2017).
Channel 4 (2016-2019)	Chief Data Scientist , winners of DataIQ 'Best data and analytics team of 2019' .
Big Health/Sleepio (2014-2016)	Chief Technology Officer, Security & Privacy - launched best-in-class sleep therapy app, built team & infrastructure to handle Fortune 50 clients.
Filtered.com	Chief Product & Technology Officer, Board Observer , using machine learning & LLMs for enterprise Learning & Development products.
Rehearsable.ai (2023-)	Part-time co-founder , using LLMs to teach difficult communication skills through roleplay and expert-level feedback.
Greg Detre Consulting Ltd (2019-)	Independent consultant for some of the top startups in the UK - on AI and software engineering leadership. Also: Chief Technology Officer, Head of Data Science, Chief Product Officer, consultant data scientist

Research

I left academia after my PhD at the [Princeton Computational Memory Lab](#) in 2010. My [H-index is 10](#), with publications in [Trends in Cognitive Sciences](#) (2900 citations), [Artificial Intelligence](#), and [Neural Computation](#).

My work included [DARPA prize-winning methods](#) for [mind-reading with machine learning on brain imaging](#), development of a popular [open source toolbox for machine learning and brain imaging](#), biologically-plausible [neural network brain simulations and algorithm development](#), [human behavioural experiments on forgetting](#), and various [other projects](#).

Also [co-winner of the Young Investigator Award](#) (Society for Judgment & Decision-Making) for our [computational modelling work](#).

Skills

LLMs/deep learning TODO	Multiple LLM-based projects (including leading development on the world's first LLM-based language learning coach for Memrise).
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Data science, scientific computing	<p>Machine learning projects & algorithms: novel neural network learning algorithms, classification, regression, recommender systems, clustering, dimensionality reduction, signal processing, text & image similarity search, visualisation.</p> <p>Large datasets (billions of rows), multiple domains (including text, image, 3D vision, content moderation).</p>
Software engineering & architecture	<p>Complex/scalable/robust production systems, re-platforming, project management with tight resources & strict deadlines, continuous integration & deployment, testing.</p> <p>Python, Javascript, C#, Matlab, R, Clojure, Lisp.</p> <p>Full-stack web development, APIs, Linux sysadmin, Git, CI/CD and testing, cloud (AWS/GCP/Azure), SQL (Postgres, MySQL, Sqlite).</p>
Product management	<p>Strategy, discovery interviews, AB testing & experiment design, analytics, gamification, project management and Kanban/agile development.</p>
Business leadership	<p>Multiple cofounder and leadership roles (CTO, CPO, CEO), senior advisor & coach, devised company strategy and raised investment, built & trained multiple teams from scratch to world-class level, expert at rescuing failing projects. Hired, managed, trained and mentored dozens of junior & senior managers, engineers, data scientists, product managers, and designers, both on-site & across continents.</p>
Training	<p>Including seminars, tutoring, teaching assistant, longitudinal programmes.</p> <p>For professional data scientists, graduate and undergraduate students, complete beginners.</p>
Information security, privacy	<p>Especially HIPAA, ISO 27001, GDPR.</p>

Awards & honours

DataIQ ‘Best data and analytics team’ (2019) and a half-dozen other awards at Channel 4.

Hillel Einhorn Young Investigator Award (2007), Society of Judgment & Decision-Making, co-winner.

Frank Knox Fellowship (2002) for study at Harvard.

Personal interests

Improvise drama, learning Greek, experiments in augmented intelligence, singing round a campfire.

References

Available upon request.

Highlighted projects and achievements

Keynote speaker, podcast host, blog author

Keynote and conference speaker, including at various [UK startup](#) and [venture capital events](#), and after-dinner speaker for a Big 5 consultancy.

Author of the [Making Data Mistakes](#) blog, on data science, management and software engineering.

Podcast co-host of [The Data Dig](#), on data science in industry.

TODO Memrise LLM for language learning

TODO Memrise adaptive learning algorithms

Led design & development of multiple novel, proprietary algorithms for highly efficient learning, incorporating mnemonics, the spacing effect, test-driven learning, and graduated difficulty. Improved retention by an order of magnitude (informal testing).

Our algorithms worked for languages (from Mandarin, to the multiple languages of Japanese, to Cornish, to Klingon).

We had to deal with many problems

Robust to people going on holiday, multiple domains (natural languages, multiple alphabets, images, audio), typos, duplicates,

The Multi-voxel pattern analysis (MVPA) toolbox (2005-2010, scientific, open source)

In grad school, I led the development and maintenance of the popular Multi-Voxel Pattern Analysis Toolbox (in Matlab) for analysing fMRI neuroimaging data with multivariate and machine learning methods.

We developed a number of state-of-the-art methods, and at the time our toolbox was the most popular software for applying machine learning to brain imaging analysis, downloaded by hundreds of labs around the world, and featured in multiple publications.

Emacs Freex mode (2005-2007, open source, personal)

An Emacs mode for massively-hyperlinked database of notes and ideas. Predated projects like Roam and Obsidian by 20 years, and I still use it dozens of times a day.

Various novel features, including full transclusion, a combination hierarchical/tagging representational system, auto-hyperlinking.

Employment

Greg Detre Consulting (2019-)

Advisor, coach and interim CTO for fast-growing startups and larger companies.

Strategy & coaching for C-suite leaders, data/AI/machine learning technical development, software architecture, improving processes & hiring.

Rehearsable.ai (2023-), co-founder

Using LLMs for roleplay & feedback to teach communication skills in the workplace.

Filtered - Chief Product & Technology Officer (2021-2022), Board Observer (2023-)

Led product, software, data, and information security teams through a major pivot into a new product category to £2m ARR in under 2 years.

Channel 4 - Chief Data Scientist (2016-2019)

Led a dozen data scientists, with senior commercial & creative stakeholders, running data products generating millions.

Developed a flurry of new and prize-winning data products across advertising, personalisation and forecasting, highlighted by CEO and co-opted widely.

Winners of DataIQ 2019 'Best data and analytics team'.

Rebooted team culture; designed & ran intensive and hugely successful internal training & innovation programme; central role in major infrastructure re-development.

Big Health/Sleepio - Chief Technology Officer (2014-2016)

Responsible for hiring, strategy and success of engineering team, technical architecture & infrastructure, and data flows & analysis. Led development of brand-new best-in-class sleep therapy iPhone app (featured by Apple as part of iOS 8 launch, reached #3 US iTunes Health & Fitness).

Multiple major rollouts to Fortune 50 & 500 companies, all successful, culminating in \$12m Series A from top investors in London & Silicon Valley.

Replaced complex legacy codebase with a more scalable, secure and extensible API and infrastructure (without major downtime or disruption).

As Security & Privacy Officer, brought to full HIPAA compliance from scratch.

The Guardian - Consultant senior data scientist (2013)

Advising senior management on data analysis & strategy.

Led a new team building large-scale data warehouse from scratch, developed novel machine learning approaches and tools to understand clusters of user behaviour, and to visualise large-scale content patterns.

Memrise.com co-founder, Chief Technology Officer (2008-2012; 2022)

Second-largest language learning app in the world (70 million users), featured in e.g. NY Times, Wired, BBC, Guardian.

Hired and managed a very successful technical team. Led the design and development of a novel, highly-effective platform for crowd-sourced vocabulary learning at scale, based on strong scientific evidence.

In 2022, led on world-first application of LLMs to language learning, already used in millions of conversations.

Research & teaching

PhD thesis: *Weakening memories by half-remembering them* (2010, advisor Prof Kenneth Norman, Princeton).

Masters thesis: *Defining voxelsets using rich psychological models* (2006, advisor Prof Kenneth Norman, Princeton).

Journals, book chapters and conference papers: see [Google Scholar](#).

Teaching assistant: undergraduate classes on neural networks and psycholinguistics

Training: ran my own informal courses and seminars for other graduate students on programming and computational methods.

Grants: Assisted on various multi-million dollar grants, for the Princeton Conte Centre, and Prof Ken Norman.