

# Jesse Spielman

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Passionate, personable and highly motivated computer scientist seeks challenging, unique and ethical opportunities. Currently finishing my PhD in Machine Learning Security; expected graduation date Fall 2025.

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## Contact

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## Proficiencies

**Programming Languages:** Python, C, Java/Android, Processing, shell scripting

**Other Computer Skills:** git, docker, linux administration, reverse engineering, troubleshooting

**Soft Skills:** Excellent written / spoken communication, collaboration, problem solving, leadership and mentoring

## Professional Experience

**2021-present**      **Senior Pipeline Developer, Lipsync Post** (London)

Maintaining the legacy pipeline systems (publishing, color pipeline) used by all projects at Lipsync, most notably the 2024 Oscar Winning film, The Brutalist.

Building artist-focused tooling with Flow integration for composers and editors.

Working on a modern pipeline based around Flow and rez.

**2020**              **Application Vulnerability Testing, Robot Talk** (New York)

Led local application tests for a multi-platform Electron / Go based application. Used discreet proxy and fuzzing tools to inspect traffic and API endpoints. Compiled vulnerability report as part of overall client security remediation audit.

**2019-2021**      **Freelance VFX Technical Director Consultant** (Global)

Leveraging 11 years of Visual Effects (VFX) industry experience, consultant for various studios to assist them with their technical needs including pipeline, infrastructure and artist tools.

Recent tasks have included Flame and Windows pipeline integration.

**2014-2019**      **Senior Pipeline Technical Director, Framestore** (New York, London)

After working as a VFX artist, made the transition to Pipeline/2D Technical Director (TD). A Technical Director is a **development and operations** role involving writing code and managing the infrastructure that supports production.

Hired by Framestore for my combination of programming skill and experience as a compositor to be the point person for the 2D aspects of their new Integrated Advertising pipeline.

Key Pipeline TD accomplishments:

- Co-winner of **2015 Shotgun 'Shotty' Award** for our team's work with SGTK.
- Personally co-designed and implemented many of our **core 2d workflows** – Ingest Publishing, 'The Lockdown', Interactive Publish Visualization Badges, Prerender Bypass, Editorial Ingest and Conform, Review and Export to Client.
- Helped integrate **Shotgun / SGTK** into the studio and educate artists / leads about these tools.
- Wrote **GUI (PyQt / PySide) and command line tools** to interact with the pipeline.
- Wrote **extra actions for the Loader** and Workfiles Manager to simplify common artist tasks. Also helped bridge these actions directly into Nuke via shim.
- Helped integrate automated **OCIO/ACES** color management into our environment.
- Developed artist/management tools to leverage the '**metadata web**' that is built during production.

Key 2D TD accomplishments:

- Working closely with artists, **integrated / modified many SGTK apps** to better fit our usage patterns, passing code / comments back to Shotgun.
- Developed **user-friendly** renderfarm, asset library and client download area integration for Nuke and Hiero.
- Massively improved the **tk-hiero-export** app to support timeline exports, published audio and modular updates of SG Shot fields.
- Wrote a few **show-specific Nuke tools** e.g. a screenspace rigging tool.
- **Debugged and Optimized** complex Nuke / Hiero scripts from production, often with gdb.

Other accomplishments:

- **Managed code releases** for multiple libraries across dozens of projects and multiple versions of Nuke / Hiero simultaneously **across four time zones**.
- Managed and **defended the codebase**, insisting on global collaboration and relevance before making changes; Saying 'no'.
- **Clearly communicated** complex workflows and tools to artists.
- **Tutored** junior / new members of the team.

**2008-2014**      **Freelance and Staff Compositor** (New York, London)

Worked for 6 years as a Compositor (VFX artist) across multiple films, TV shows and advertisement campaigns, including the Oscar nominated film "Inside Llewyn Davis" and the James Bond Film "Spectre".

Performed start-to-finish compositing (paint and roto, 2d and 3d tracking, keying, color correction and full comp work) for at least 30 TV and Film projects in Shake and Nuke. Proficient at both 'invisible effects' and complex multi-pass CG compositing.

More information is available via my **IMDB profile** and my **2013 showreel**.

## Education

**2021-present**      **PhD, Computer Science, University of Birmingham (UK)**

- **Thesis Topic:** Using Side Channel Attacks to leak hidden parameters from Neural Networks
- **Funding:** Intel Corporation
- **Expected Graduation date:** Fall, 2025
- **Supervisors:** **Dr. David Oswald** and **Dr. Mark Ryan**
- **Societies:** Board member of **AFNOM ethical hacking society** and **Missing Semester UoB**

**2019-2020**      **MSc, Advanced Computer Science (Distinction), University of Birmingham (UK)**

- **Dissertation:** "Hey Alexa: Who's Mallory? An Amazon Alexa Intercept Appliance"
- **Modules:** ML, Operating Systems, Cryptography, Parallel Computing, Data Mining, Mobile.
- **Member:** AFNOM ethical hacking society

**2017**      **Machine Learning for Artists, Gene Kogan @ Machines Room (London, UK)**

Workshop introducing the theory / application of machine learning for creative and artistic practice.

**2012-2013**      **Continuing Education, ITP @ New York University (New York)**

Attended 2x summer workshops on creative coding, 3d printing and 'maker' technologies

**2004-2008**      **BFA Film and Animation (Honors), RIT (Rochester, USA)**

- **Minor:** Computer Science
- **Concentration:** Communications

## Papers, Talks, Lectures and Participation

**November**      **Embedded Security Challenge, CSAW Europe**

**2023**

Our team came in second place for the CTF-style event around embedded hardware security.

**June 2022**      **Faulty Point Unit: ABI Poisoning Attacks on Trusted Execution Environments, ACM**

Co-author on paper which "analyzes a previously overlooked attack surface that allows unprivileged adversaries to impact floating-point computations in enclaves through the Application Binary Interface (ABI)"

### Open Access

**Sept 2021**      **Data Study Group, Turing Institute (UK)**

Two-week biomedical-themed data-science/ML hackathon. Challenge involved unsupervised discovery and alignment of biological structures in electron tomography volumes. Developed skill with Jupyter Studio, numpy, data exploration and 3d visualization.

**Dec 2020**      **LD\_PRELOAD and You, AFNOM Lightning Talks (Birmingham, UK)**

## Slides and Materials

**Jul 2020**      **Perceval CtF challenge**, wtctf (Birmingham, UK)

**Feb 2019**      **Hack the Solar System Hackathon**, **AMNH** (New York)

Honorable Mention for work as part of a team that **helped extract** the positions of 3d metal 'bubbles' found inside a volumetric scan of a meteorite for the American Museum of Natural History's annual Hackathon.

**Oct 2018**      **NASA Spaceapps Hackathon 2018**, New York

Part of a team that design a tool that leveraged NASA's Earth observations data APIs to characterize land cover/land use conditions at informal settlements.

**Feb 2018**      **Hack the Deep Hackathon**, **AMNH** (New York)

Part of an ad-hoc team which **wrote a program** to help generate 3d geometry from photographs of 50nm wide slices of cellular anatomy.

**Apr, 2016**      **Spectre Title Sequence: A Case Study**, **FMX** (Stuttgart, Germany)

**Apr, 2015**      **Syntastic for Pipeline Development**, **Vim London** (London)

## Video of talk

**Dec, 2013**      **VFX Photogrammetry with VisualSFM**, NYC Nuke User Group (New York)

**Jul, 2013**      **Writing a Music Visualizer from Scratch**, **ITP Camp @ NYU** (New York)

**Jul, 2012**      **Generative 3D modeling with Structure Synth**, **ITP Camp @ NYU** (New York)

## Personal Projects

### nuke.vim

Wrote **nuke.vim**, a tool for bridging the Nuke Compositor's built in script editor and vim.

### Photogrammetry workflow

Wrote an **online tutorial** about a free structure-from-motion pipeline that still draws a few hundred hits a day and was written up in Make magazine.

## Volunteer Work

**Jan 2021**      **Volunteer** Georgia Democratic Party (Georgia, USA)

- Helped with 'Turf Cutting' to help volunteers cure ballots
- Technical adviser to 'special cases' team which focused especially on disenfranchised voters
- Managed / cleaned data in VAN and Google Sheets to support researchers

**Nov 2020**      **Volunteer** Democratic Party's National Voter Protection Hotline (USA)

- Performed technical support for 12,000+ virtual call center volunteers who were assisting voters around the country for the 2020 Presidential election.
- Improved a Browser plugin to assist with automating downloads of shift data
- Helped support early AM US shift from Europe

**2015-2017**      **Engineer, Radio Lollipop** @ Great Ormond Street Hospital for Children (London)

Help maintain / update the technical systems for the radio station at the children's hospital

## **Interests**

Pub Quiz, Music Visualization, Photogrammetry, Maker culture, Board Games, Blues Music, CtFs.