



Alex Zhukov

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Profile

I am an engineer who enjoys tackling hard or seemingly impossible problems, knows how to translate between engineer, scientist and business-speak. I obsess about efficiency both organizational and technical, lead teams, code in any language fit for the job, build server infrastructure, optimize CPU or GPU code, train and productize a machine learning model.

I am an author of multiple patents in video field.

[Object recognition and database population for video indexing](#)

[System and method of object recognition and database population for video indexing](#)

[Frequency domain interest point descriptor](#)

[Correlating sensor inputs with content stream intervals and selectively requesting and transmitting content streams](#)

[Logging events in media files](#)

[Logging events in media files including frame matching](#)

My passions are cars, computer vision and skydiving.

Experience

SR SOFTWARE ENGINEER II; UBER ADVANCED TECHNOLOGY GROUP, SELF DRIVING VEHICLES PLATFORM – 2020-PRESENT

Responsible for live video delivery from autonomous vehicles to misc off board services.

- Designed and delivered entire WebRTC low latency live streaming stack for self-driving vehicles (SDV)
- Implemented live panorama stitching used on SDV and for visualization purposes across org
- Wrote GPU ray tracing for lidar simulation from scratch
- Contributed extensively to [Amazon open source WebRTC](#) implementation (top 1 non amazon contributor)
- Enabled python visual debugging "run any test at any time in any ide"
- Gave multiple tech talks on video streaming and media in general
- Sped up video loading (20x) and generation (4x) for SDV videos by optimizing mp4 generation and enabling assembly in h264 encoder
- Created usb webcam driver for WFH self driving testing
- Co-authored WebRTC for the Curious book

- Co-authored "Systems and Methods for Dynamic Data Buffering for Autonomous Vehicle Remote Assistance" patent

CTO; VIDEOGORILLAS – 2009-2019

Responsible for all aspects of development, product releases, and technical communications with customers; actively involved in products design.

- Built and led a team of 15 engineers.
- Designed and delivered in-browser video editing tools for Sony Pictures. <https://sonymcs.com/>
- Engineered on the fly video transcoding system and frame precise HTML5 video player for ABC and Walt Disney. <https://videogorillas.com/player>
- Delivered best in class fully automatic frame matching technology for CBS.
- Architected, engineered and patented fully automatic movie restore technology used to restore a full feature movie for Netflix. <https://www.provideocoalition.com/videogorillas-bigfoot-super-resolution-converts-films-from-native-480p-to-4k/>
- Created LIVE4 GoPro - live streaming for GoPro product <https://live4.io/>
- Created ultra low latency live streaming platform for DJI drones, with custom live streaming media server <https://youtu.be/xrCUG1xw5Ks>
- Co-Author of <https://github.com/jcodec/jcodec> and <https://github.com/zhuker/lamejs>

LEAD ENGINEER; VIEWDLE – 2006-2010

Face recognition in video company. Acquired by Google.

Responsible for all aspects of development, product releases, and technical communications with customers; was actively involved in products design.

- Helped raise VC funding
- Built and led a team of 10 engineers .
- Designed and delivered fusion engine for enriching video indexing information with textual data obtained from custom speech-to-text engine.
- Delivered facial recognition service for indexing video files in the cloud for Reuters.
- Delivered best of the class facial recognition engine for video files.
- Ported the video recognition engine to ARM neon.
- Delivered experimental facial recognition engine using CUDA for NVIDIA's Tesla (joint project with NVIDIA).

- Collected requirements, led development and delivered VideoFriends application for Facebook.

Education

National University of Kyiv-Mohyla Academy – Computer Science BSc, 2004

Skills

Software design, Java, C, JavaScript, C++, Python, Kotlin

References

Stan Vitvitsky - hardware video codec engineer at Google

Arsen Kostenko - video engineer at Netflix

Andrew Rabinovich - Director, Deep Learning at MagicLeap

John Vickery - COO Zeroth industries

Oles Petriv - CTO, Reface AI