

# ALEXANDER S HORN

(312) 970-0759  
me@alexnano.net

## EMPLOYMENT

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### Principal Software Engineer &

#### Analytics Architect

ShopperTrak/Tyco/Johnson Controls

2015-Current

- Refactored mobile analytics platform into a robust horizontally scalable micro-services architecture in AWS. 70x speed up. Added Prod/Stage/Dev tiers, feature-branch workflow, and continuous integration. Handed off platform 2017, though helped w/ GCP migration in 2018.
- Cross-functional lead for architecture, new sensor evaluation/IOT, ML/AI, and pilots for new use cases.
- pre-sales demos through to production services for Predictive Traffic Modelling, Retail Dwell Personae, and Video Intelligence (including real time 10 camera 4K RGB->FPGA person detection, tracking, demographics)
- IP Generation: 2018 JCI trade secret for wireless calibration, more patents in process

### Programmer / Analyst III

#### Future Internet Architecture

UCLA REMAP

2011 - 2015

- Research at UCLA with Xerox Parc's [ccnx.org](http://ccnx.org) for NSF's [named-data.net](http://named-data.net) &, now managed by NIST
- Physical and Civic computing projects including interactive bus benches, public sound & light sculpture, geotagged mobile walking tours, Google Glass app prototypes, XR development ([remap.ucla.edu](http://remap.ucla.edu))

### Senior Interactive Engineer

Agency.com

2008 -2011

- Interactive development via ActionScript/HTML5/JS/CSS3 from 2D design comps (for HP, Nike, Apple)
- Published 2 iOS Applications (Objective C) (HP)

### Physical Computing / IOT

See [alexnano.net](http://alexnano.net) for portfolio

1998-Ongoing

- Contribute to open source computer vision person tracking software ([openptrack.org](http://openptrack.org)) (2014-2018+)
- Beacon activated media and Augmented Reality application (iOS/iPad) for a popup Art Museum (2015)
- Control system for 11 floor robot in UK (2007 – 2017), VR Metagenomic DataViz @ Siggraph 2007
- Interactive artwork (computer vision, 3D graphics) in 4 Children's hospitals across US (2002-2008)
- Designed App and Deployed 100+ embedded kiosks across US (2005-6), Retail JIT Inventory (Prada, 2001)

## EDUCATION

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### DePaul University

B.A. 2012, M.S. 2018

- **M.S. in Predictive Analytics** with Computing Methods Concentration
  - Data Mining (Data Preproc, Linear Algebra) and Machine Learning: Classification, Regression, Social Network/Graph analysis, Recommender Systems, NLP, Computer Vision, Neural Networks)
- **B.A. in Computing:** Scalable Information Systems. Completed Spring 2011. In-major GPA: 3.76
  - CS, Algorithms, Network & Application Architecture, Security, UI/UX, Data Visualization

## TECHNICAL APPROACH

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**IT/UX:** Enjoy full service lifecycle: Interview->needs->use cases->api->app->monitoring

- **Management:** scoping, building and leading teams (Agile, RUP)
- **Architecture:** optimal workflows for scalability in embedded, mobile, Linux, AWS, GCP, hybrid

## ADDITIONAL EXPERIENCE AND AWARDS

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- **Instructor (2006):** Taught 'Real-time Media' (Multimedia Programming) at Art Institute of Chicago
- **Embedded Computing:** Mobile/IOT dev with various platforms (Raspberry PI, Jetson, Arduino, Android/iOS)

## Languages and Technologies

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- Daily: Python, Linux, Bash, Tensorflow, MXNet, OpenVino, OpenCV
- Monthly: R, C, C++; node, Docker, MongoDB/MySQL/Postgres/Redshift
- Intermittently: Hadoop, Spark & real time analytics, Kubernetes, Java/Android, Objective C/Swift
- Latent: 2/3D/Interactive/AR/VR/DataViz (A/V editing, 2D/3D: Maya, Blender, Unity, Touch Designer, WebGL, GLSLs, d3/JavaScript (React, Angular)