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Washington's Artificial Intelligence Landscape

Dr. Joseph Williams
ICT Sector Lead

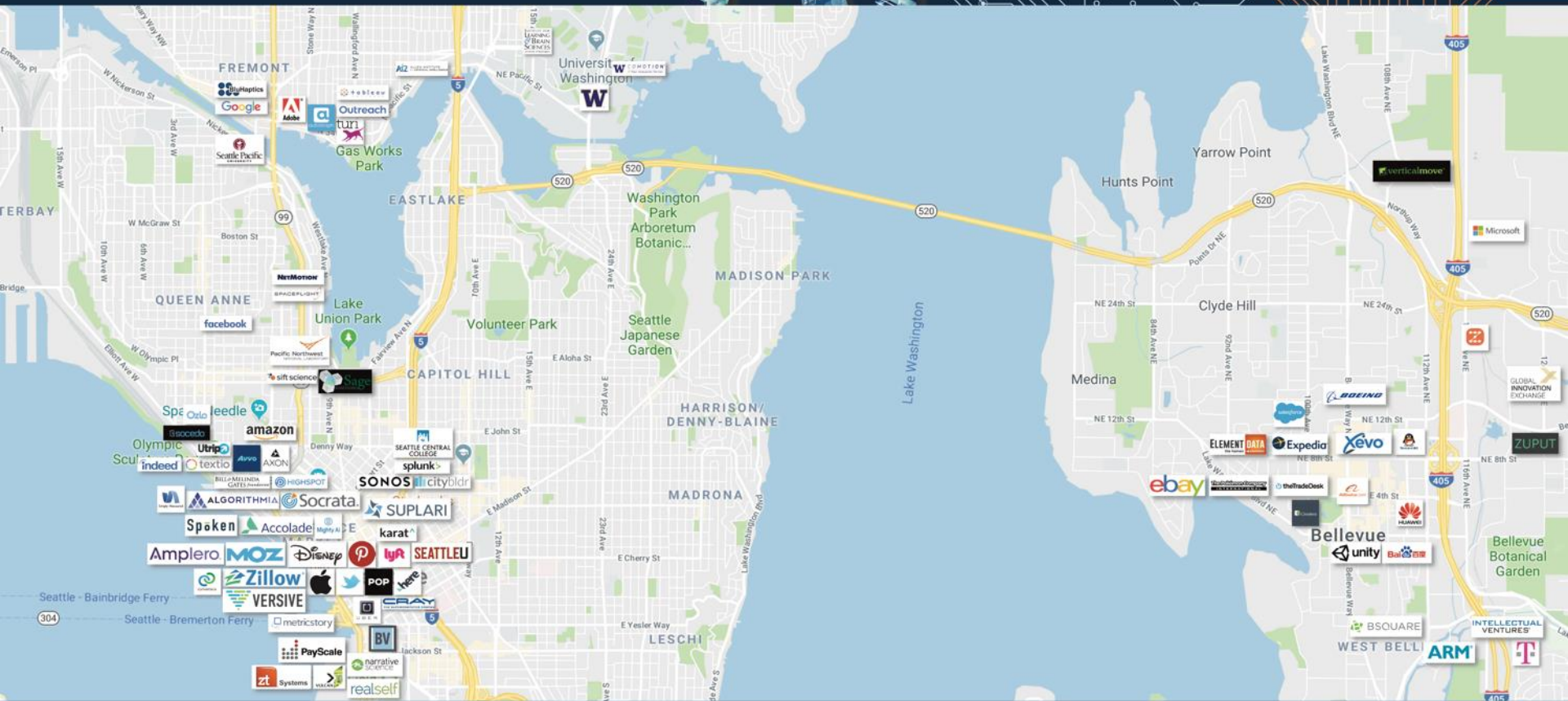October 2018

Nvidia CEO: Software Is Eating the World, but AI Is Going to Eat Software

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WASHINGTON STATE
ARTIFICIAL INTELLIGENCE CLUSTER

SEATTLE: AI Companies and Institutions

- Accolade
- Adobe
- Algorithmia
- Allen Institute for Artificial Intelligence
- Amazon
- Amplero
- Apple
- Autograph
- Avvo Axxon
- Bill & Melinda Gates Foundation
- Blue Haptics
- Brandversity
- CityBldr
- CoMotion
- Conversica
- Cray
- Disney
- Facebook
- Google
- Here
- Highspot
- Indeed
- Karat
- Lyft
- MetricStory
- Mighty AI
- Moz
- Narrative Science
- NetMotion
- Ozlo
- Pacific Northwest National Lab
- Payscale
- Pinterest
- Pop
- Real Self
- Sage Bio
- Seattle Central College
- Seattle Pacific University
- Seattle University
- Sift Science
- Simply Measured
- Socedo
- Socrata
- Sonos
- SpaceFlight
- Splunk
- Spoken
- Spulari
- Tableau
- Textio
- Turi
- Twitter
- University of Washington
- Utrip
- UW Computer Science
- UW Institute for Learning & Brain Sciences
- Versive
- Vulcan
- Zillow
- zt Systems

EASTSIDE: AI Companies and Institutions

- Alibaba
- ARM
- Baidu
- Boeing
- Bsquare
- Cloutera
- eBay
- ElementData
- Expedia
- GIX
- Huawei Intellectual Ventures
- Microsoft
- Pokemon / Niantic
- T-Mobile
- Tencent
- theTradeDesk
- Unity
- Xevo
- Zensa
- Zuput

CHOOSE Washington
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strengthening communities

Washington is a Major Power in AI

- Influential players HQ'd here
  - Microsoft and Amazon
  - University of Washington
  - Allen Institute for AI
  - Expedia, Starbucks, Concur/SAP
  - Boeing
  - T-Mobile
  - PNNL and the B&MGF
- Influential Outposts
  - Google, Facebook, Apple, Disney, Uber
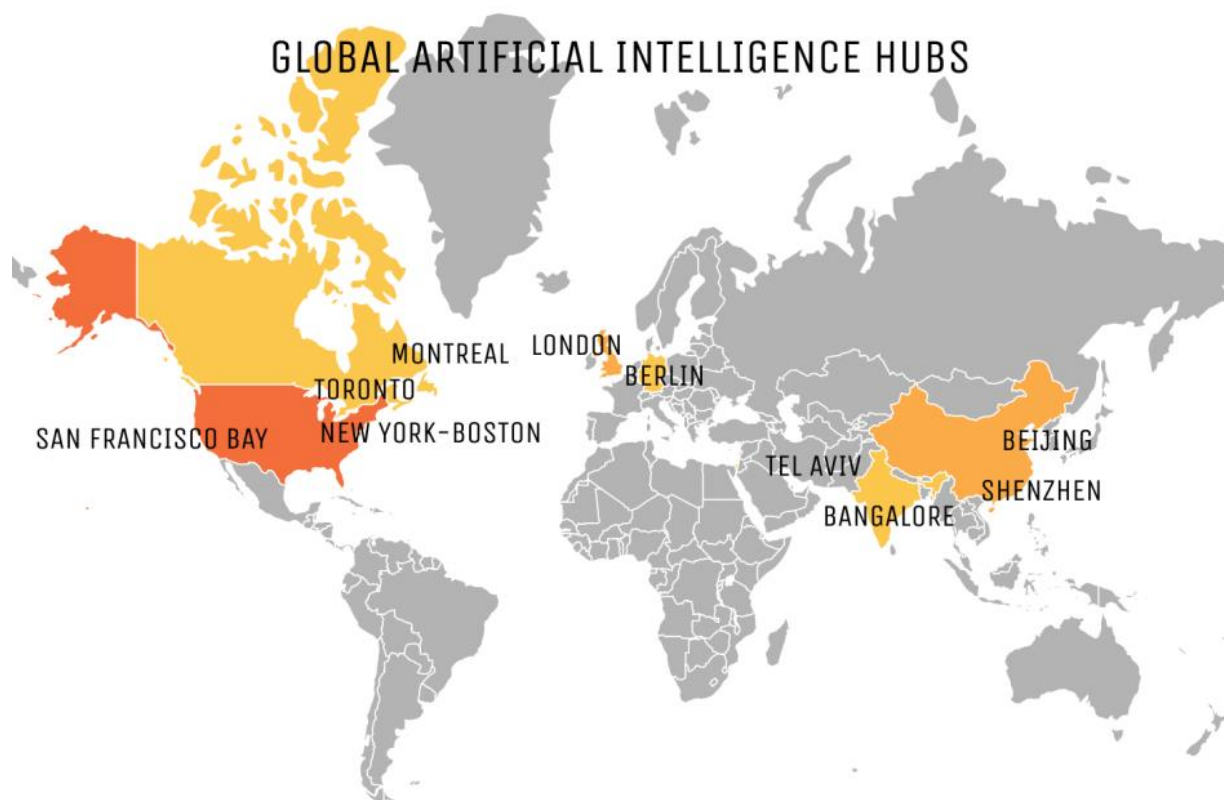 - Baidu, Alibaba, Tencent, ARM, HERE

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But our leadership is _not_ well-understood outside of Washington

TOP 25 LOCATIONS FOR AI AND ROBOTICS

RANK	DESTINATION	COUNTRY
1	Singapore	Singapore
2	Shanghai	China
3	Dubai	UAE
4	Houston	US
5	Beijing	China
6	London	UK
7	Tokyo	Japan
8	Munich	Germany
9	Bangalore	India
10	Paris	France
11	Düsseldorf	Germany
12	Dublin	Ireland
13	Seoul	South Korea
14	Frankfurt	Germany
15	Helsinki	Finland
16	Atlanta	US
17	Amsterdam	Netherlands
18	Aberdeen	UK
19	Boston	US
20	Hong Kong	Hong Kong
21	New York	US
22	Melbourne	Australia
23	Berlin	Germany
24	Sydney	Australia
25	Toronto	Canada

Source: fDi Intelligence

GLOBAL ARTIFICIAL INTELLIGENCE HUBS

MONTREAL LONDON BERLIN
TORONTO
SAN FRANCISCO BAY NEW YORK-BOSTON
TEL AVIV BEIJING
SHENZHEN
BANGALORE

INFOGRAPH: SYNCED

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Where Seattle ranks in AI Startups

A. The race for leadership

Global distribution of AI startups

Top countries and cities by number of startups

Top Countries
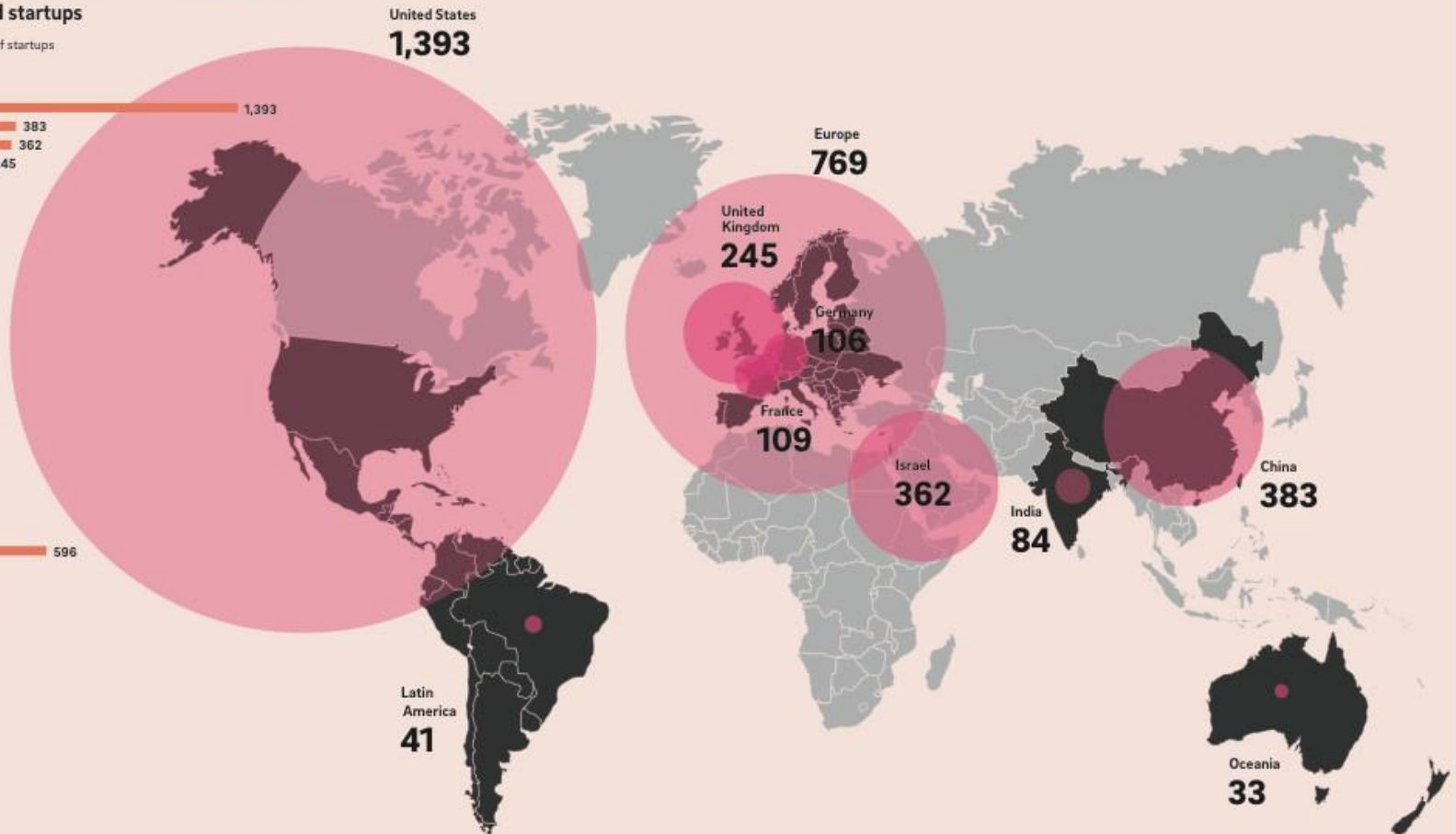
1	United States	1,393
2	China	383
3	Israel	362
4	United Kingdom	245
5	Canada	131
6	Japan	113
7	France	109
8	Germany	106
9	India	82
10	Sweden	55
11	Finland	45
12	South Korea	42
13	Spain	39
14	Singapore	35
15	Switzerland	28
16	Australia	27
17	Brazil	26
18	Netherlands	26
19	Italy	22
20	Russia	19

Top regional hubs

Cities' extended urban areas[1,2]

1	San Francisco	596
2	London	211
3	Tel Aviv	189
4	New York	180
5	Beijing	150
6	Boston	102
7	Tokyo	99
8	Shanghai	77
9	Los Angeles	73
10	Paris	73
11	Shenzhen	66
12	Berlin	56
13	Toronto	47
14	Seoul	42
15	Austin	36
16	Washington	36
17	Seattle	35
18	Singapore	35
19	Bangalore	32
20	Helsinki	32

United States **1,393**

Europe **769**

United Kingdom **245**

Germany **106**

France **109**

Israel **362**

India **84**
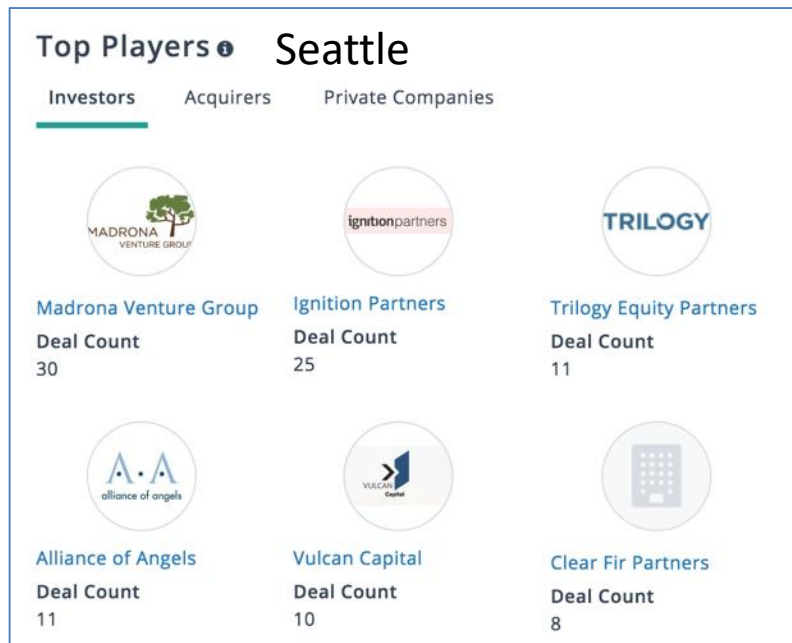
China **383**

Latin America **41**

Oceania **33**

1 Regional hubs comprise a core city plus its extended urban area and wider agglomeration: e.g. San Francisco plus Bay Area, London plus Oxford & Cambridge et al., Beijing plus Tianjin, Shenzhen plus Guangzhou et al., etc.

2 Ranking excluding 180 startups for which information on city was not available – Among them, 130 are located in Israel

Source: Asgard, CB Insights, Crunchbase, Israel startups shortlist, AI list Nordics and Baltic, Machine Intelligence 2.0, Chinese AI list, European AI landscape, German AI landscape, Israel AI startup map, Japanese AI list, UK AI list, French AI ecosystem, Korean AI list, own research.
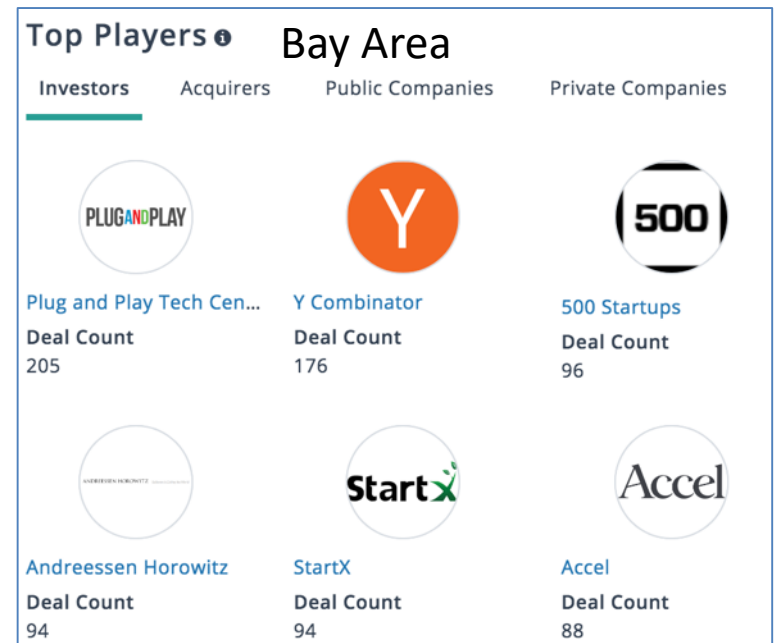
ASGARD   Roland Berger

Why we rank low in AI startups

- Lack of global awareness to attract out of area startups
- Smaller number of investors and deals
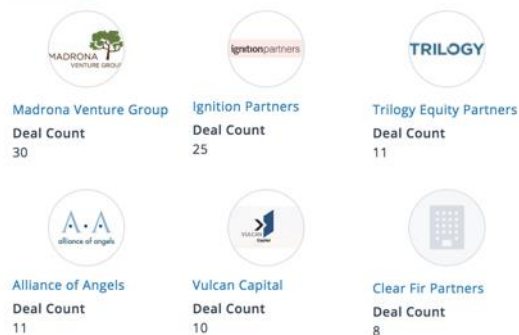- Amazon and Microsoft dominate the local market

Top Players · Seattle
Investors   Acquirers   Private Companies

Madrona Venture Group
Deal Count
30

Ignition Partners
Deal Count
25

Trilogy Equity Partners
Deal Count
11

Alliance of Angels
Deal Count
11

Vulcan Capital
Deal Count
10

Clear Fir Partners
Deal Count
8

VS.

Top Players · Bay Area
Investors   Acquirers   Public Companies   Private Companies

Plug and Play Tech Cen...
Deal Count
205

Y Combinator
Deal Count
176

500 Startups
Deal Count
96

Andreessen Horowitz
Deal Count
94

StartX
Deal Count
94

Accel
Deal Count
88

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Seattle versus two regional competitors in AI

Seattle Metro

Top Players ⓘ

Investors | Acquirers | Private Companies

Madrona Venture Group
Deal Count
30

Ignition Partners
Deal Count
25

Trilogy Equity Partners
Deal Count
11

Alliance of Angels
Deal Count
11

Vulcan Capital
Deal Count
10

Clear Fir Partners
Deal Count
8

New York Metro

Top Players ⓘ
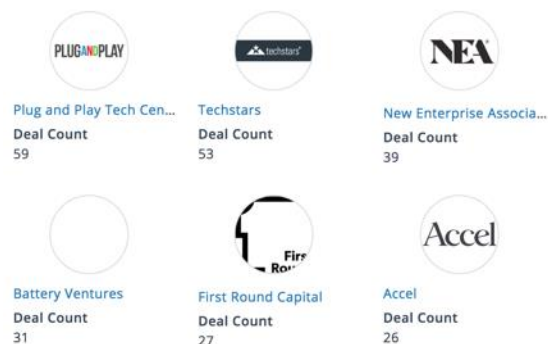
Investors | Acquirers | Public Companies | Private Companies

Plug and Play Tech Cen...
Deal Count
59

Techstars
Deal Count
53

New Enterprise Associa...
Deal Count
39

Battery Ventures
Deal Count
31

First Round Capital
Deal Count
27

Accel
Deal Count
26

DC Metro

Top Players ⓘ

Investors | Acquirers | Public Companies | Private Companies

New Enterprise Associa...
Deal Count
24

Accel
Deal Count
23

In-Q-Tel
Deal Count
18

Center for Innovative T...
Deal Count
18

Blu Venture Investors
Deal Count
17

Novak Biddle Venture P...
Deal Count
14

Source: Pitchbook

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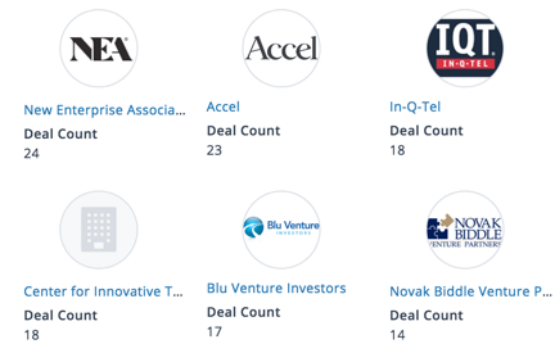
Quick Look at AI startups in Washington
since 2008 (having at least one successful funding round)

- 179 startup companies operated in Washington classifying themselves in a major way as AI/ML
  - Mostly in King County
  - A few in Clark, Pierce, Kitsap, Whatcom, Spokane
  - 96 of the active ones are still HQ'd in Washington
  - 28 previously WA-HQ'd AI startups have been acquired
  - 9 have gone out of business
- Valuation of about $4B for active startups
- About 6,400 employees

Source: Pitchbook

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Beyond Startups, Washington is still an impact state for the AI economy

- Amazon and Microsoft dominate the landscape

- Boeing, Starbucks, Expedia, Concur are category leaders

- Pitchbook, Payscale, EagleView, Icertis are leaders in their niche

- Increasingly an important outpost hub for global companies looking for an AI Dev Center

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Variables in Washington's AI story

- AI workforce for startups is a scramble
- Cost of AI expertise may be out of reach for some key Washington sectors (maritime, forest products, Ag, tourism, public sector, non-profits)
- Rise of consulting firms offering AI services to a sector, such as DNV-GL to maritime
- Industry hiring of AI professors is negatively impacting educational capability

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Where Seattle stacks for the AI job market

Top cities for AI jobs
Cities with the highest concentration of AI jobs

Rank	Metro area	% of job postings
1.	New York, NY	11.6%
2.	San Francisco, CA	9.6%
3.	San Jose, CA	9.2%
4.	Washington, DC	7.9%
5.	Boston, MA	6.1%
6.	Seattle, WA	5.9%
7.	Chicago, IL	4.6%
8.	Los Angeles, CA	4.1%
9.	Dallas-Fort Worth, TX	2.5%
10.	Philadelphia, PA	2.4%

Source: Indeed

Experience Level
Mid Level	(266)
Senior Level	(156)
Entry Level	(86)

Location
Seattle, WA	(333)
Bellevue, WA	(110)
Redmond, WA	(110)
Kirkland, WA	(32)
Issaquah, WA	(11)
Bellingham, WA	(3)
Tukwila, WA	(2)
Richland, WA	(2)
Bothell, WA	(2)
Washington State	(2)
Lynnwood, WA	(1)
Columbia, WA	(1)
Spokane, WA	(1)

indeed

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Workforce Development

- UW is heavily committed to AI
    - Computer Science & Engineering
    - iSchool
    - eScience Institute
- Other universities and colleges offer CS degrees with several courses in AI
- Apprenticeship programs in CS, no AI emphasis yet
- The graduation to job vacancies issues

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AI workforce economics

Typical AI specialists, which include newly-graduated Ph.D.s and those with just a few years of experience, can rake in a salary of $300,000 to $500,000 a year, according to a recent New York Times report. Salaries are growing so quickly that there have been joking references to the National Football League-style salary cap on AI professionals.

Nvidia CEO Jensen Huang cold-calls AI job candidates

Source: Silicon Valley Business Journal

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Washington does not get its due Internationally

Top 10 cities with the most AI enterprises

By Wang Yanfang
China.org.cn, July 30, 2018

0 Comment(s)   Print   E-mail

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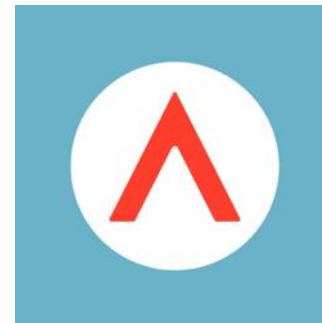
#5
New York, U.S.

New York, U.S. [Xinhua]

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AI Innovation Partnership Zone

Greater Seattle Partners is developing a proposal for an AI IPZ that would be submitted to Commerce in 2019.

Specifics are still under development, but possible collaborators in the IPZ are noted below. Proposal expected in January.

What Will the AI IPZ Do?

- Build the community notion of an AI cluster
- Promote the Seattle brand for AI
    - Recruiting companies
    - Recruiting workforce
    - Recruiting faculty and students
    - Recruiting capital
- Provide a structure platform for international engagement
- Provide a mechanism to invest in advancing the state as an AI Hub

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Washington Trade and AI

- Japan AI Summit
  - 3 inbound missions per year to Seattle
  - 1 outbound mission per year to Tokyo
- Chilean Ambassador to the US AI briefing (2018)
- Spanish retail delegation (2017)
- Hannover-Messe trade show: shifting from EU's Industrie 4.0 to Seattle's Digital Transformation

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