



The leader in the practice, policy, & advocacy of technology-enhanced higher education.

WCET Summit

The 21st Century Workforce Data Challenges and Solutions

SENDING THE RIGHT SIGNALS: HOW HIGHER EDUCATION CAN BRIDGE THE SKILLS GAP

MATT SIGELMAN, CEO
BURNING GLASS TECHNOLOGIES

June 9, 2016

WCET Leadership Summit

THE JOB MARKET IS BROKEN AND THAT HAS ENORMOUS COSTS

19.5%
of U.S. workers
are unemployed or
underemployed

Attrition
costs colleges
\$16B

Employers,
workers, and
schools all bear
the burden

Bad hiring costs
employers
\$150B

THE LABOR MARKET IS RIFE WITH MISSED SIGNALS



*250 million
resumes/year*



Job Seekers
Signaling Skills
Seeking Jobs
Planning Careers

Missed Connections

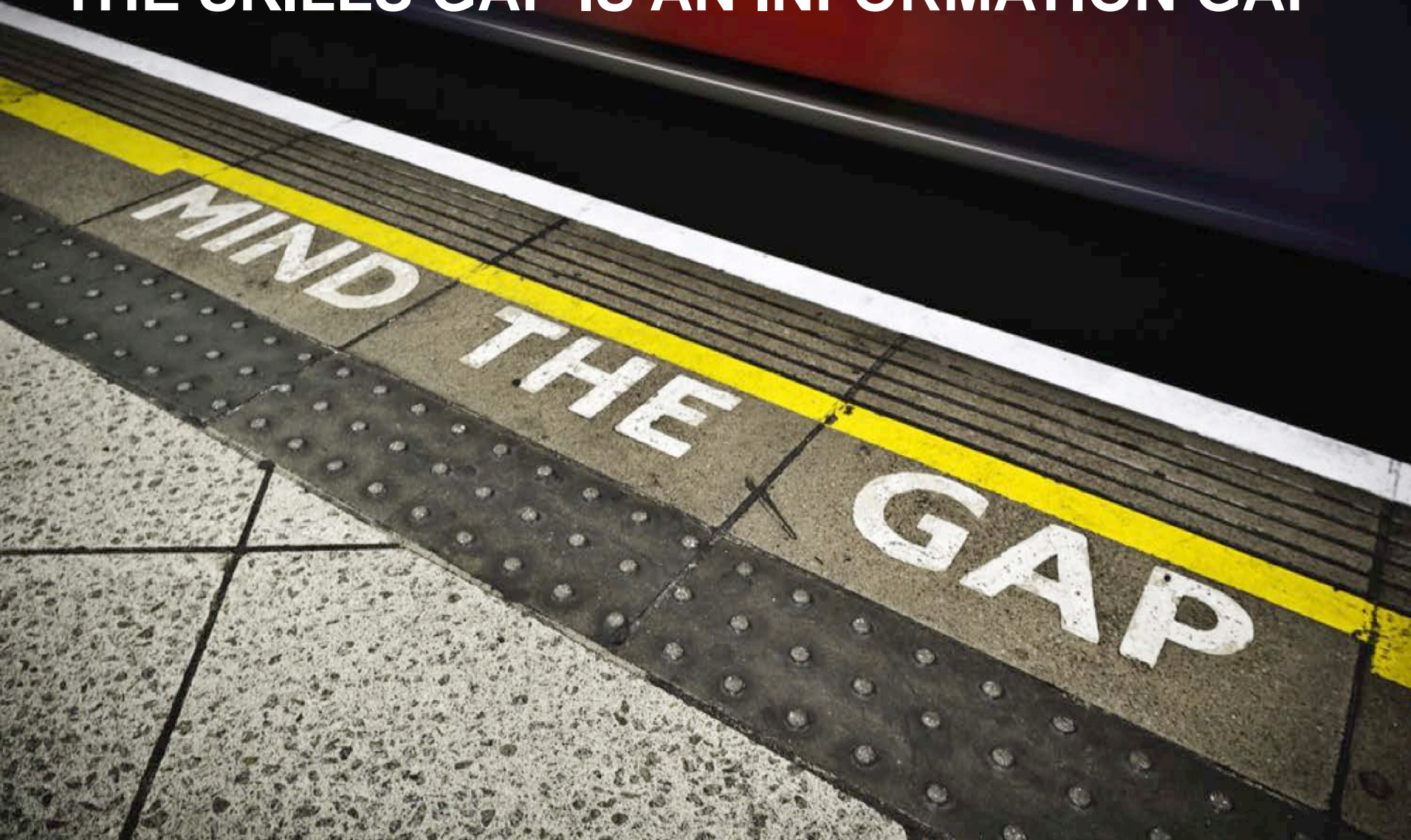
No Common Language
No Clear Supply Chain
No Reliable Toolset

*500 million
current/historical
job postings*



Employers
Signaling Needs
Broadcasting Jobs

THE SKILLS GAP IS AN INFORMATION GAP



THE CHALLENGE TO HIGHER EDUCATION

Listening to employers is important, but only part of the answer

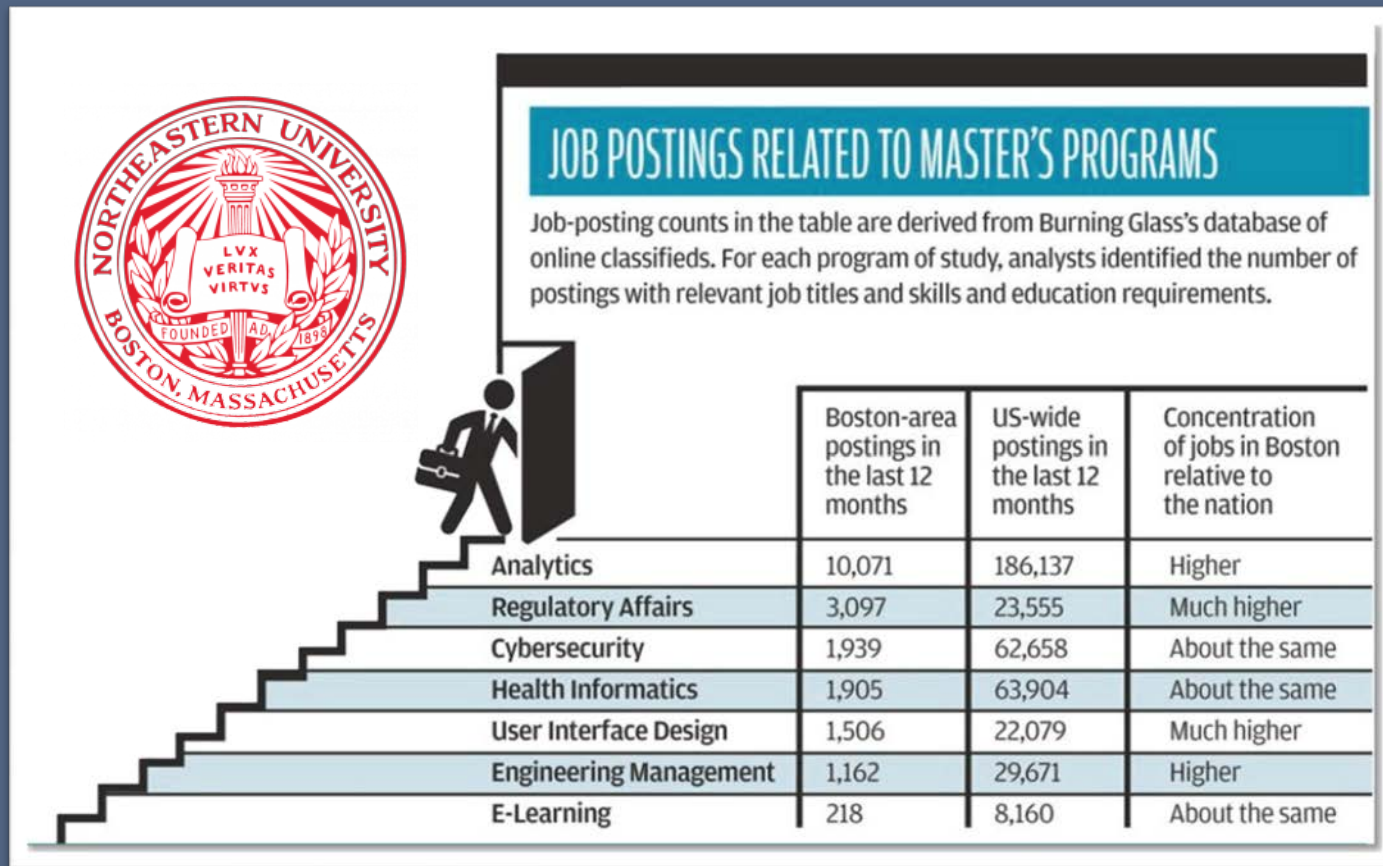
The diagram consists of three interconnected circles. The leftmost circle is light gray and contains the text 'Listening to employers is important, but only part of the answer'. It is connected to a blue circle in the upper middle, which contains 'Students need better ways of signaling their skills'. This blue circle is further connected to an orange circle on the right, which contains 'Credentials can help, but we need to understand where they work and where they don't'. The circles are connected by thin white lines.

Students need better ways of signaling their skills

Credentials can help, but we need to understand where they work and where they don't

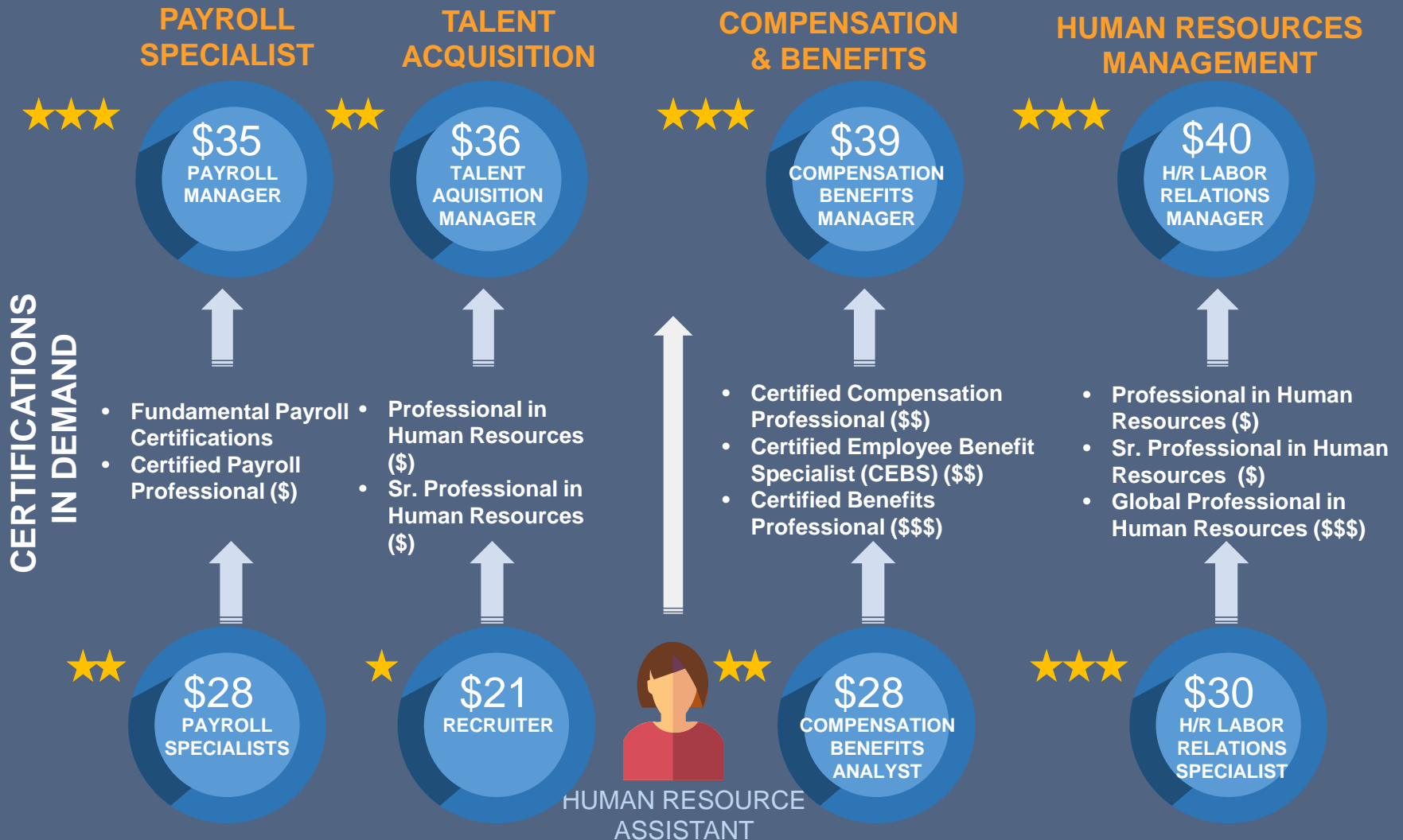
PROGRAMS BUILT AROUND DEMAND: NORTHEASTERN UNIVERSITY

CREATING TARGETED PROGRAMS FOR LOCAL JOB MARKET DEMAND



CAN CERTS BE THE SIGNAL?

HOW CERTIFICATION CAN VALIDATE SKILLS: HR



THE KEY IS UNDERSTANDING

HOW & WHERE CERTS WORK: A TYPOLOGY



DOOR OPENERS

ASW (Welding)
A+ (help desk)

+8% salary premium



CAREER ADVANCERS

CISSP
+10% salary premium

PMP
+21% salary premium



BADGES

Android
Hadoop

+22% salary premium

A HYBRID JOB ECONOMY CAN BENEFIT FROM CERTIFICATIONS



WEB
DEVELOPMENT
AND DESIGN

67,250
JOB COUNT
LAST 12 MONTHS

3%
CHANGE SINCE 2011

\$87,217
AVG. SALARY



DIGITAL
MARKETING &
MARKETING
AUTOMATION

45,991
JOB COUNT
LAST 12 MONTHS

145%
CHANGE SINCE 2011

\$76,783
AVG. SALARY



PROJECT
MANAGEMENT

40,752
JOB COUNT
LAST 12 MONTHS

7%
CHANGE SINCE 2011

\$106,471
AVG. SALARY



USER
EXPERIENCE /
USER
INTERFACE
(UI/UX)

29,825
JOB COUNT
LAST 12 MONTHS

15%
CHANGE SINCE 2011

\$99,177
AVG. SALARY



MOBILE
DEVELOPMENT

41,032
JOB COUNT
LAST 12 MONTHS

135%
CHANGE SINCE 2011

\$111,380
AVG. SALARY



DATA
ANALYTICS

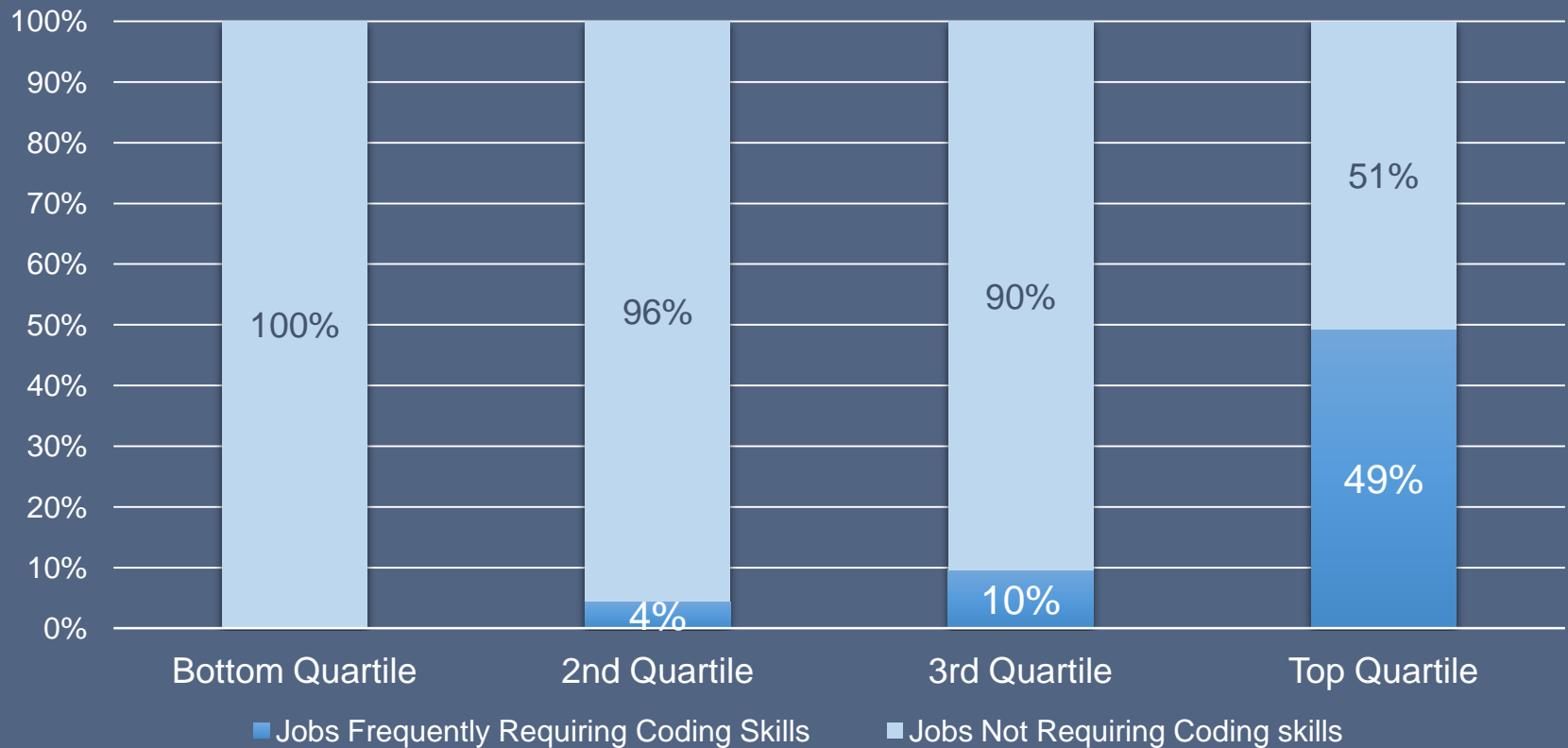
41,000
JOB COUNT
LAST 12 MONTHS

372%
CHANGE SINCE 2011

\$105,540
AVG. SALARY

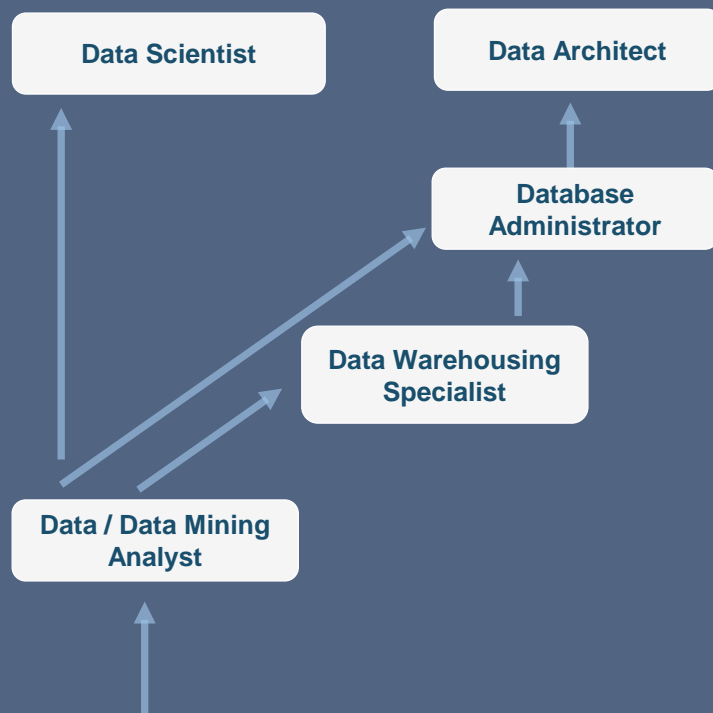
CODING IS BECOMING CRUCIAL TO HIGH PAYING CAREERS – NOT JUST IN TECH

Jobs and Coding Skills by Income Level



CASE STUDY: GENERAL ASSEMBLY

TARGETED PROGRAMS AIMED AT REAL-TIME TRANSITION
TO HIGH DEMAND OPPORTUNITIES



GENERAL ASSEMBLY

- Data Science Immersive
- SQL Bootcamp
- Data Analytics
- Python for Data Science

Entry Level Database / Programming Roles

SPECIFIC SKILLS

MAKE LIBERAL ARTS GRADS MORE MARKETABLE

We identified eight skill sets that Liberal Arts graduates can develop through a modest amount of coursework, such as a minor or online training or internships, that **double their job prospects**:

IT NETWORKING & SUPPORT

+ \$1,058 premium
66,429 postings

SALES

567,855 postings

GENERAL BUSINESS

+ \$11,144 premium
577,787 postings

SOCIAL MEDIA

+ \$3,424 premium
399,577 postings

DATA ANALYSIS & MANAGEMENT

+ \$12,703 premium
136,757 postings

MARKETING

+ \$336 premium
359,916 postings

GRAPHIC DESIGN

+ \$9,188 premium
134,090 postings

COMPUTER PROGRAMMING

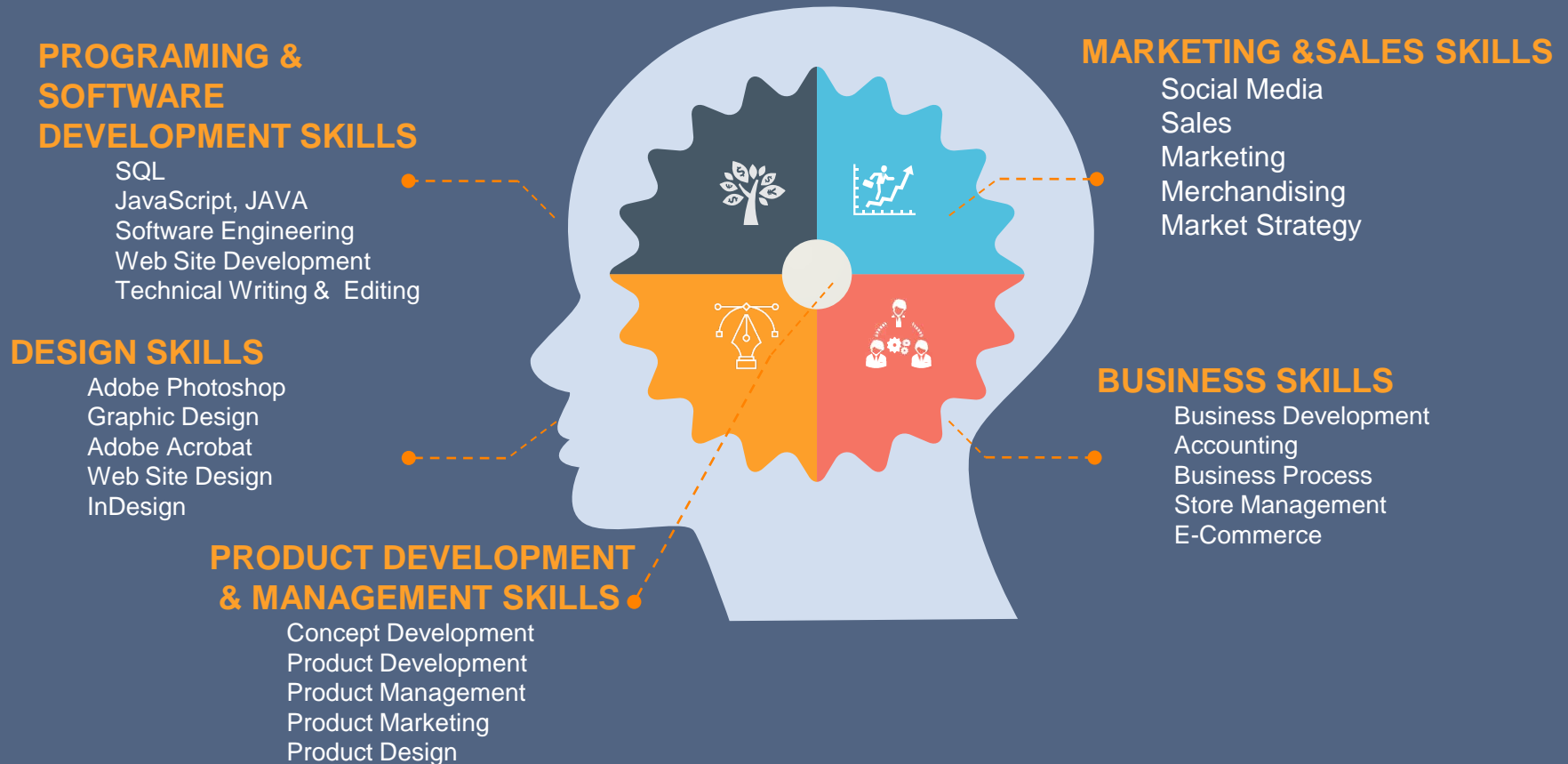
+ \$17,753 premium
52,822 postings



SOFT SKILLS DON'T STAND ALONE

EMPLOYERS NEED THE FULL PACKAGE

Top Skills Employers Demand in Jobs Emphasizing Creativity



SIGNPOSTING COURSE CLUSTERS FOR STUDENTS & EMPLOYERS



How do I make
my degree look
relevant?

LIBERAL
ARTS
DEGREE



Does this
candidate have
relevant skills?



- *SOC 224 Org Theory*
- *POL 312 Survey Research*
- *HIS 247 Hist. of Labor Relations*
- *ECO 131 Intro to Statistics*



LIBERAL
ARTS
DEGREE

HUMAN RESOURCE
MANAGEMENT
CERTIFICATE

INCREASED
JOB
OPPORTUNITIES

A CAUTIONARY NOTE

ONLY A FEW CERTIFICATIONS HAVE CURRENCY WITH EMPLOYERS

Time Range: Last 12 months	Number of Job Postings	Cumulative Percentage of Job Postings Requesting Certification
Job postings requesting a Top 50 Certification	1,912,496	67%
Job postings requesting a Top 100 Certification	2,231,460	78%
Job postings requesting a Top 200 Certification	2,499,844	88%

THE PATH FORWARD

We need to ensure that signals are both sent and received

And provide signposts that are clear to employers

Students need a road map of what to learn—and when.

Portfolium

WCET Leadership Summit

21st Century Workforce Data Challenges and Solutions



Presented by Adam Markowitz, Founder & CEO

adam@portfolium.com

[@markowitzadam](https://twitter.com/markowitzadam)





2016 Skills Gap: 2M students graduating this year, but 60% of employers can't find the skills they need.

Student's Perspective:



“I **don't** have professional work experience to put on my LinkedIn or resume.”

<13%
OF MILLENNIALS
ACTIVELY USE
LinkedIn

AVERAGE AGE
OF A USER ON
LinkedIn
is **46 years old**

85 years of research proves work samples to be the #1 indicator of job performance

Projects

Presentations

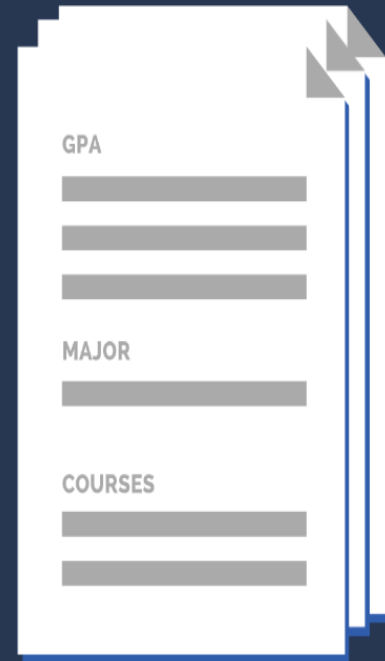
Writing Samples

Labs & Experiments

Research

Clubs & Extracurriculars

VS.



“Talent Currency” of **Modern Era**

“Talent Currency” of **Previous Era**

A competency marketplace empowers students...

Direct

- To see how other students are showcasing their skills
- To easily aggregate and showcase evidence of their skills
- To see what opportunities are available for their given skills
- To see what opportunities exist beyond the skills they currently have (their own personal skills gap)
- To see ways of developing and proving the skills they need to secure an opportunity

Indirect

- To take ownership of their learning journey
- To focus on the end goal sooner than later
- To be inspired and encouraged to reach their full potential

A competency marketplace empowers employers...

Direct

- To post job opportunities with an ideal competency profile for potential candidates
- To immediately see candidates who match the ideal competency profile
- To engage with these candidates and ultimately invite them to apply
- To create multiple competency profiles and see newly matched candidates each day

Indirect

- To identify a talent pool of qualified candidates
- To extend their reach beyond the current limits (geographical, “core schools”, etc.)
- To “cut through the noise” of job boards
- To market their company to prospective candidates

A competency marketplace empowers universities...

Direct

- To easily assess and track the skills and competencies of their students and alumni
- To see trends in the data across various departments and courses
- To arm their partner employers with a tool to better identify the talent they're looking for
- To understand the skills and competencies their employers care about most
- To identify potential gaps that exist in what skills are required and what their students possess

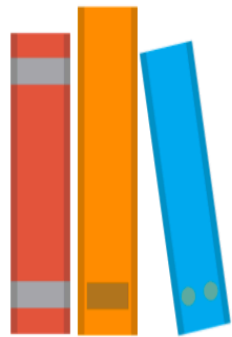
Indirect

- To prove student learning outcomes
- To track job placement outcomes
- To potentially identify new curriculum opportunities

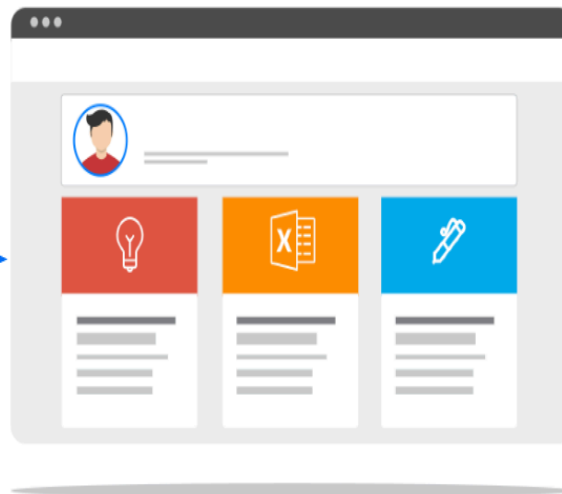
How do we prove learning and match it to opportunity?



Students



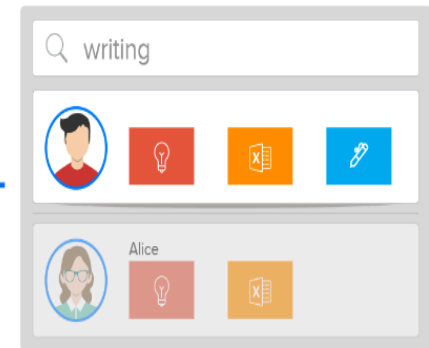
Students complete work and projects inside and outside of the classroom



Display these work samples in students' portfolios with skills tagged + indexed



Employers



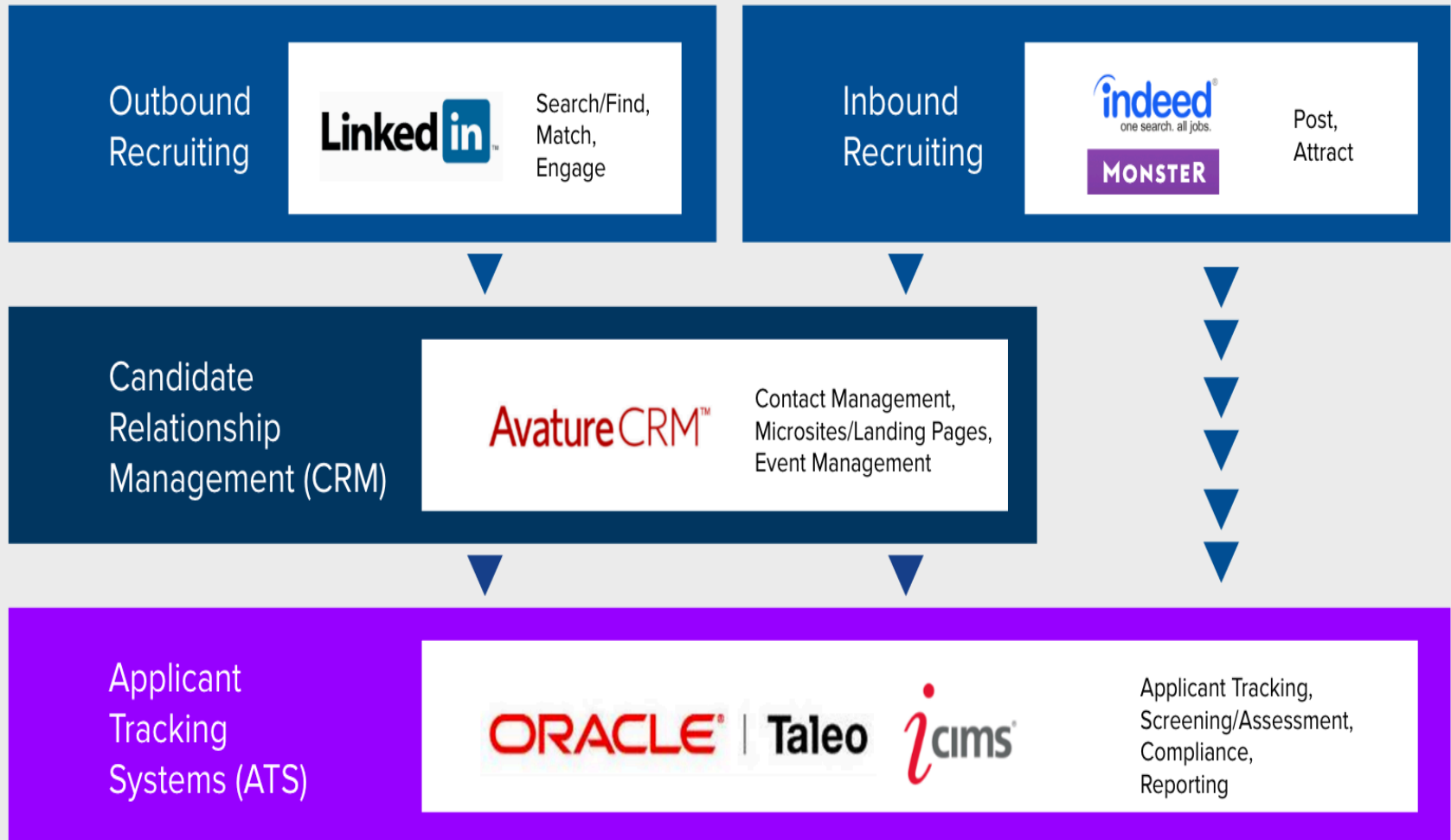
Matching students appears when employer searches for relevant skills

Employers: Competency-Based Hiring

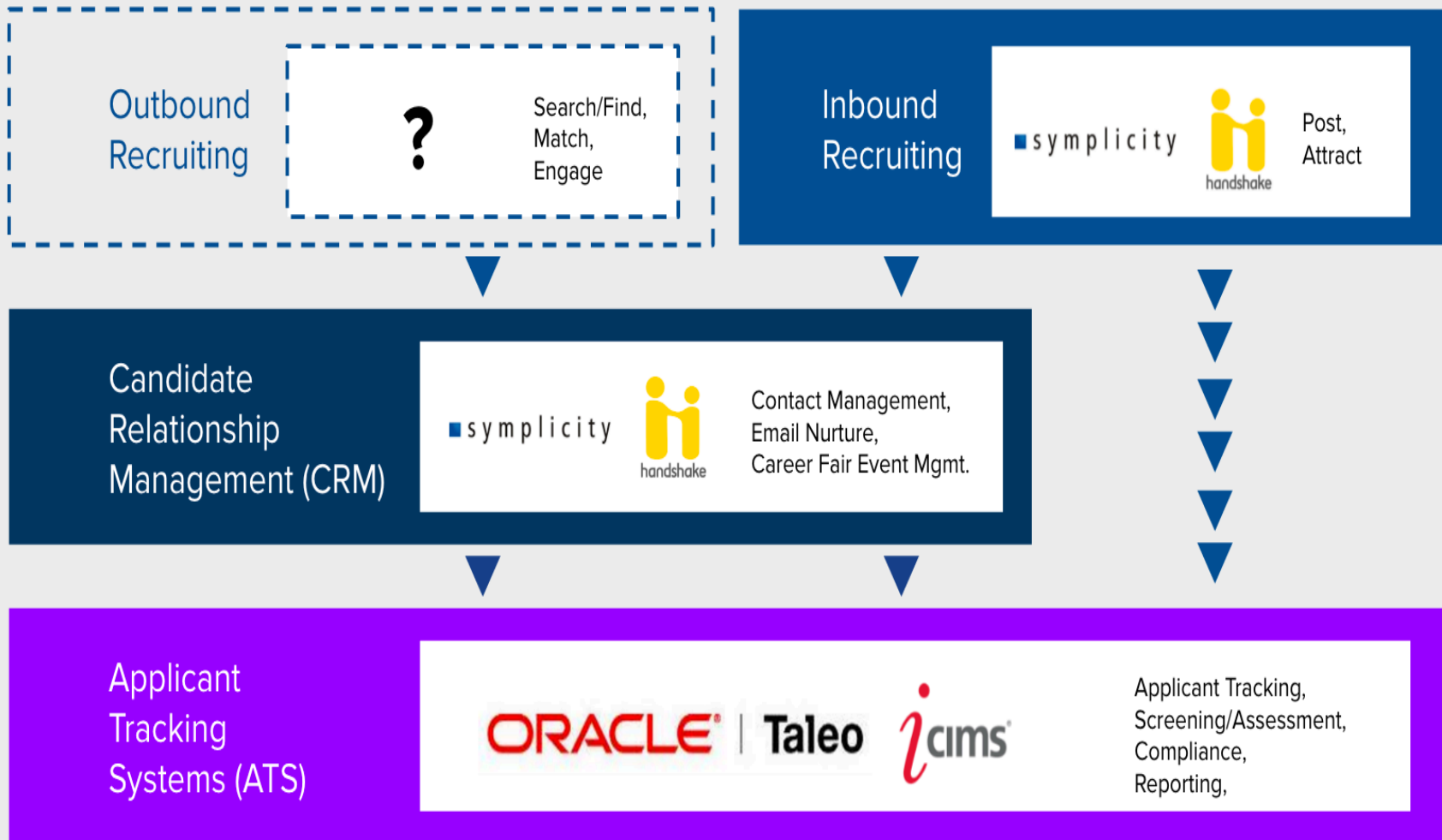
portfolio.com/employers



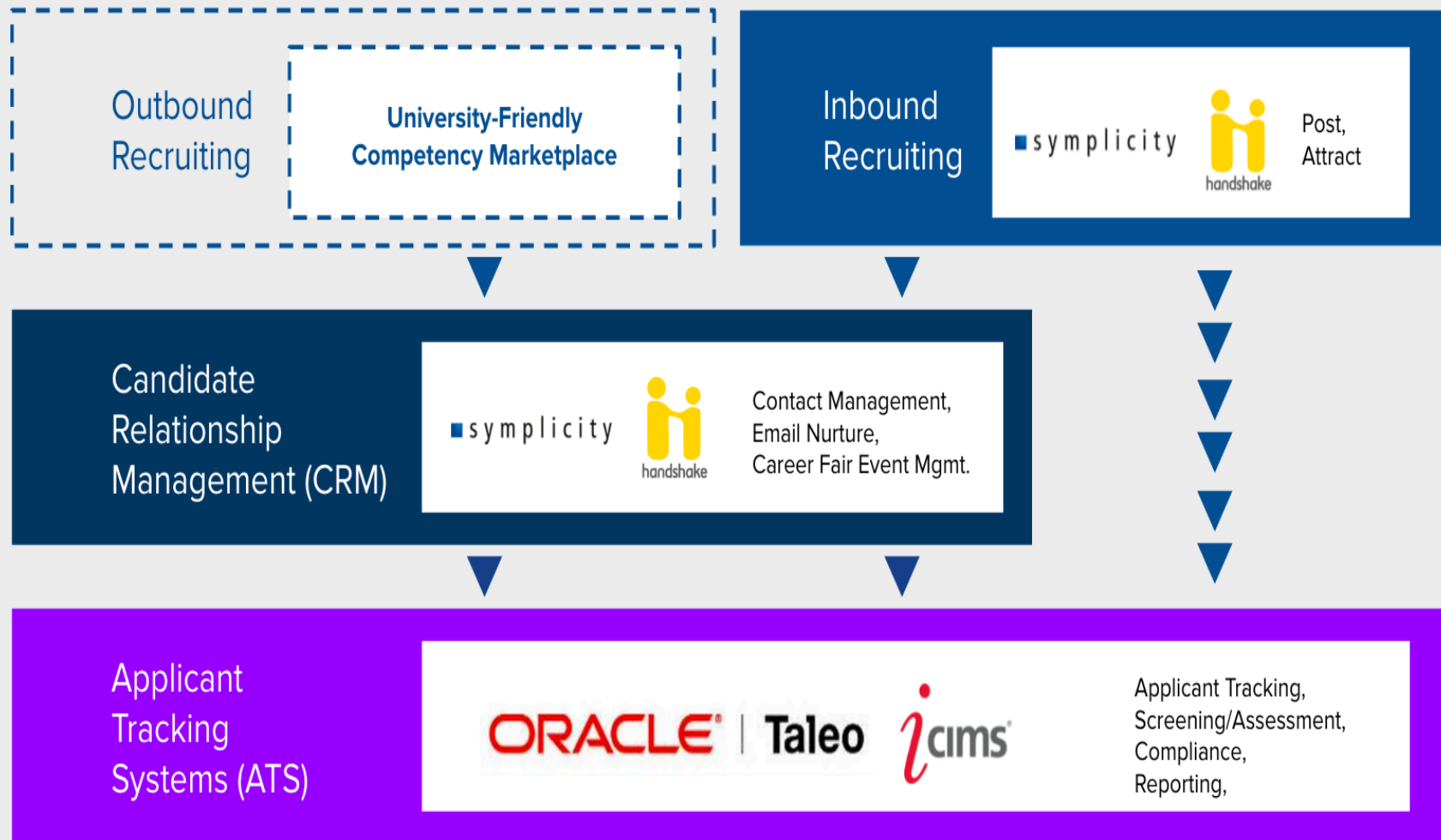
Recruiting tech stack (experienced-level)



Recruiting tech stack (college/entry-level)

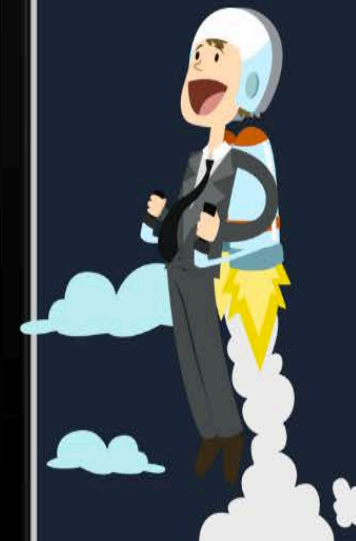


Recruiting tech stack (college/entry-level)



Competency Profile: Analytical Reasoning & Problem Solving

The screenshot displays the TalentMatch search interface. At the top, there is a navigation bar with the TalentMatch logo, a search bar, and a 'POST JOB' button. Below the navigation bar, the search results are displayed. On the left side, there are filters for 'SCHOOLS' (44 / 44) and 'MAJORS / FIELDS OF STUDY'. The 'MAJORS / FIELDS OF STUDY' filter includes options like 'Mathematics and Statistics' (1,827), 'Statistics' (1,596), 'Public Policy' (925), 'Computer Science' (865), 'Public Policy & Administration' (782), and 'Business Administration (Strategi...' (756). Below these filters is a search input field for majors. On the right side, there is a search bar with the query 'analysis OR "critical study" OR analytics OR analyz* OR simulat* OR regression OR argument OR policy OR stat' and a 'SEARCH' button. Below the search bar, there are options to 'CLEAR FILTERS', 'SORT BY', and 'SAVE SEARCH'. The search results show 1-10 of 29,350 results (2.33 seconds). The first result is for 'Miranda Taylor', a student at California State University, Northridge, with a Pre-Accountancy major. Her profile includes an introduction, skills (Data Entry, Analysis), and a gallery of images related to her activities. The second result is for 'Oliver Durra', a student at San Jose State University, with a Geography major. His profile includes an introduction, skills (Analysis, Comparing And contrasting, Strategy, Communication Strategy, Critical Analysis), and a gallery of images related to his activities.



Competency Profile: Leadership & Teamwork



☰ P TalentMatch Search

[POST JOB](#)
48
34
P

SCHOOLS 44 / 44 ✎

MAJORS / FIELDS OF STUDY ^

- MPA - Public Sectr Mgmt/Lead... (1,863)
- Liberal Studies (612)
- Business Administration (543)
- Nursing (466)
- Computer Science (407)
- Psychology (367)

Start typing a major...

ENROLLMENT STATUS ^

- Undergraduate (14,838)
- Graduated (6,198)
- Associate (944)
- Graduate (771)
- Not Provided (513)
- High School / GED (238)

GRAD YEAR ^

leader OR exceeded OR "leadership certificate" OR "student senate" OR "team lead" OR trained OR trainer OR X 🔍 ADVANCED

CLEAR FILTERS SORT BY ▾ SAVE SEARCH 📌

1 - 10 of 23,502 results (2.53 seconds)

Sara Kramer ★ 🌟

"University of San Diego student, Deltasig, and Marketing Intern at Portfolium."
University of San Diego - Business and Communication Studies - 2017

INVITE ▾ MESSAGE

Intro: A business and communication studies major at the University of San Diego, originally from Colorado. Passionate Deltasig, avid volleyball player, regular beach goer and cat lover.

Clubs & Affiliations: Vice **President** of Resident's Hall Association ... In **Founder's** Hall, an all girls dorm at USD, I served on the board for the Resident's Hall Association, a club where we put on several events, including a dance party in the school's coffee shop and pumpkin painting, to bring residents together and create a better sense of community. ... Delta Sigma Pi, Lambda Pi Chapter ... Vice **President** of Pledge Education for Delta Sigma Pi, professional business fraternity at USD.

Relay for Life

Glory Road and My Own Leadership Journey

Marketing Assistant: Kranect Staffing Agency

Meeting the Portfolium team!

Miranda Taylor ★ 🌟

"Define success on your own terms, achieve it by your own rules, and build a life you're proud..."
California State University, Northridge - Pre-Accountancy - 2017

INVITE ▾ MESSAGE

Intro: Miranda Taylor currently attends California State University, Northridge, majoring in Pre-Accountancy.

Which employers are doing competency-based hiring?

30,000 employers across all major industries

WELLS FARGO



financial engines®



Chevron



Panda
Restaurant Group, Inc.

GEICO®



ORACLE®

HYATT®



Portfolium

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Presented by Adam Markowitz, Founder & CEO

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