Improving LinkedIn's Job Search Capabilities

How to get students more involved

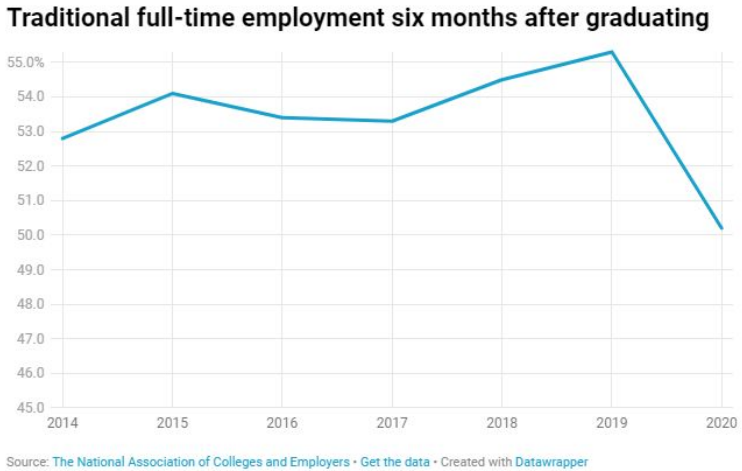
Prompt

LinkedIn is trying to expand its job market offerings by creating an app that will recommend the best jobs to recent college graduates based on their skills and preferences.

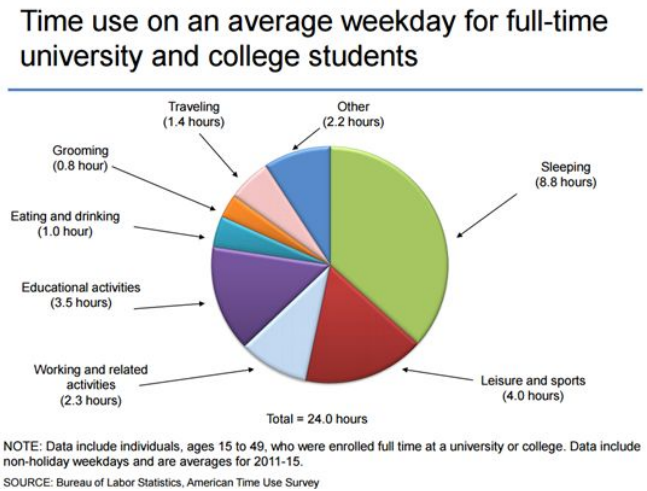
Your team has been tasked with researching the market for this offering, the kinds of data needed, how to connect this with other LinkedIn offerings and how to best monetize it.

Problem and Pain Points

- Entry job market is becoming increasingly competitive
- Unemployment rates of college graduates is trending downward
- Number of Bachelor degrees awarded per year steadily increasing
- Recent data shows it takes longer for recent graduates to find jobs
- CNBC states smaller schools (<2000 students) have higher post graduation placement rates



Target Audience



- Students
  - 19.4 million students attended colleges and universities in fall 2020
  - 16.2 million students attended undergraduate programs
  - 3.1 million students attended graduate programs
  - Juniors, Seniors, Graduate students
- Colleges/Universities
  - Create partnerships with large and prestigious schools to start
    - Ex: Cornell University, Penn State, MIT
  - Target to start with 5 - 10 schools as a rollout
  - Ideal schools have:
    - Over 20,000 students
    - Business, Computer Science, Engineering schools

Available Programs

- Uloop
  - “Uloop.com is an online marketplace for college students providing students an online bulletin board to buy and sell textbooks, find housing and roommates, full-time jobs and internships, connect with classmates for carpools, and campus events.”
- Handshake
  - “Handshake’s mission is to democratize access to opportunity: to help every student find the right job, no matter where they’re from or who they know.”
  - 1,400+ higher ed institutions
  - 750,000+ employers recruiting on Handshake
  - Job postings, on campus interviews, resume building

Proposed Idea

Elevator Pitch: A two-sided user interface that matches job seeking students and employers looking to hire entry to mid level positions. Students can create a profile with their coursework, skills, certifications, and other qualifications. Employers can post job listings with desired qualifications, coursework, and job description. Our software takes the two sides of data and finds ideal pairings and delivers job descriptions and summaries to students via email and/or GUI. Interface can be used to make first contact between students and employers to begin the interview process.

Advantages

- Finds and promotes best fit jobs to students
- Saves time during the job search for both potential employees and employers
- Helps develop relationships between employers and schools
- Streamlines introductions between potential employees and employers

Technical Roadmap

Epic: Data Warehousing

- Story: Create a secure environment for accessing data (HIGH)
  - Ticket: Create SQL connection hosted AWS (HIGH)
  - Ticket: Create accounts to access data for automated scripts (HIGH)
  - Ticket: Create individual user accounts for data teams (LOW)
- Story: Data Warehouse and Lake Schema (HIGH)
  - Ticket: Create an organized directory for data storage and testing in S3 (LOW)
  - Ticket: Design warehouse schema (HIGH)
    - Tables: Students, Employers, Schools, Job Listings, Industry, Job Type
  - Ticket: Testing query speeds and efficiency (MED)
- Story: Data Ingest
  - Ticket: Ingest new companies, jobs, students, etc. into SQL

Epic: Skill/Job Matchmaking Algorithm

- Story: ATS Application for Algorithm (MED)
  - Ticket: Use ATS to filter out bad matches immediately (MED)
  - Ticket: Refine keyword recognition/resume formatting problems (LOW)
- Story: ML Model for Candidate Matching (HIGH)
  - Ticket: Logistic Regression ML training R&D (HIGH)
  - Ticket: Algorithm output refinement (MED)
  - Ticket: Data dump of LinkedIn user account details (LOW)
  - Ticket: Data dump of LinkedIn easy apply details (MED)

Epic: GUI/Data Input

- Story: Employer Facing Interface (MED)
  - Ticket: Create import system for employers to add job descriptions (HIGH)
  - Ticket: High level view of student applicants (LOW)
  - Ticket: Method for employers to contact students for interviews (HIGH)
- Story: Student Facing Interface (MED)
  - Ticket: Create import system for students to add resume (HIGH)
  - Ticket: Manual addition of skills and coursework (MED)
  - Ticket: Profile summary (LOW)

Epic: Match Delivery to Students

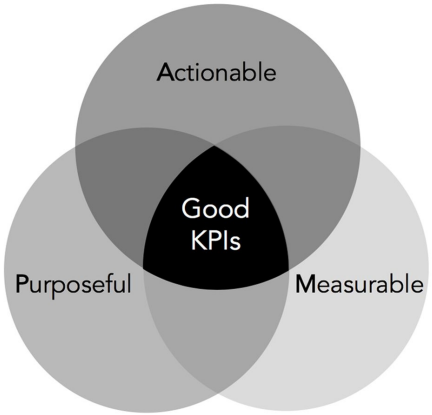
- Story: Deliverable Style and File Type (MED)
  - Ticket: Create report generation scripts (HIGH)
  - Ticket: Survey or A/B test preferred file types (LOW)
- Story: Automate Output Delivery (HIGH)
  - Ticket: Write report delivery scripts (HIGH)
  - Ticket: Setup cronjobs on EC2 instance (HIGH)

Product Future Success Strategy

- Complete and clean metadata from both parties
- Pairing algorithm needs to be fast and scalable
  - Simple, clean schema with efficient index column joins
  - Efficient queries and take advantage of existing Python libraries for processing speed
- Create a feedback loop with internal A/B testing amongst partner schools
  - GUI brand and style
  - Functionality: buttons, text boxes, filters
- Initial strategy is to start small and gradually increase number of users
  - Stress test the algorithm and usage of app before going fully to open market
  - Promote the app within LinkedIn.com
  - Create a partnership network with influential schools so others want to join the fold

Measurable KPIs

- Timeline Milestones
  - Data schema and warehousing needs to be finished before algorithm development which needs to be deep into development before report generation can be started
- User Interaction Rate
  - What percentage of available students have signed up?
  - What percentage of accounts are actively applying to jobs?
- Placement Rate
  - What percentage of applications result in an interview?
  - Can we track which interviews become offers?
- Growth Milestones
  - X number of schools promoting the app by this quarter
  - Y number of companies posting jobs on the app before that month
  - Z number of app downloads weekly



Market Rollout

- Required for launch:
  - Data schema in place with code workflow for ingesting new users and additional job postings
  - Algorithm for matching students skills to job descriptions
    - Start small; fewer, high quality matches to begin
  - Automated workflow for running algorithm periodically (weekly?) and delivering results to students
- Approach a select few schools to develop a partnership with
  - Work with the schools to develop their individualized marketing campaigns
  - Partner schools will help shape the future of the product
- Create a database of job postings and descriptions
  - Employers will have first access to the app in order to have an extensive library of jobs before making it available to students
- Before launch ideally:
  - 5 - 10 schools are introduced to the product and have began early stages of partnership
  - At least 1,000 active job listings from a variety of industries
  - LinkedIn internal marketing campaign to tease the release to other employers and active users
    - Push notification to users in school or “Looking For Work” banners