List of Corrections

P1 – CV-generation

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Group 5

October 22, 2020

STUDENT REPORT

AALBORG UNIVERSITY

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Create a program that automatically generates a digital CV targeted at a specific job listing.

2. Background

2.1. Unemployment

A program that automatically generates job applications would obviously be of most use to people actively searching for a job. These people might currently hold a job while looking for better opportunities. However it is reasonable to assume that a significant number of them are unemployed, and thus it seems pertinent to have a closer look at unemployment.

There are different types of unemployment, and the effect of applying for jobs better and faster through automatic generation of the application will vary greatly among them. If there is a mismatch between offered and demanded skills, called structural unemployment, little can be done through writing of job applications to fill these jobs.Likewise if there is a downturn in the economy and no jobs are available for the unemployed to apply for – this is called cyclical unemployment. The third broad category of unemployment is frictional

unemployment, which constitutes time spent between jobs on searching or transferring from one job to another.For this type of unemployment a more effective method of applying for jobs could potentially shorten the unemployment period greatly. The same holds true whenever there is an upturn in the economy and the cyclical unemployment rate falls as jobs are created.

From society's perspective it does not matter who fills a job – only that a job is filled. Therefore a more effective method for applying for jobs is mostly of relevance whenever frictional unemployment is high or on the back of an economic upturn. However from a job applicant's perspective it is certainly of utmost importance who gets the job, and although the effectiveness of automatically generating job applications might be higher under the aforementioned circumstances, it could be argued to be of much higher importance when jobs are few and far between, or when the applicant is dissatisfied with their current job. Thus a program that produces better job applications faster through automatic generation could very well be in demand under any circumstances.

2.1.1. Unemployment rates

Studying unemployment rates can help gauge the scale of the issue, although they will not provide the full picture. The rates are affected by multiple factors, thus to get a slightly more comprehensive overview it can be advantageous to study differing countries. The following will focus on two differing countries with one important commonality: they are both prime targets if we were to develop a program with the aforementioned purpose.

Figure 1 on the following page displays the unemployment rate for Denmark, a small country with a generally robust yet agile private business sector and a large public sector. Some argue that the unemployment numbers are actually higher, as the government uses subsidies to keep people employed, but even the official statistics clearly show, that a significant number of people could be looking for a job and producing applications.[1] The latest total number of unemployed people in Denmark is 137800.

Figure 2 on the next page displays the unemployment rate for the United States, the highest populated western country – four times that of the second highest – with a comparatively small public sector. Although the rate is generally higher than that of Denmark it follows the same pattern, and again the number of people looking for jobs is quite significant. The latest total number of unemployed people in the U.S. is 12.6 million

Besides the shear number of unemployed people, what is interesting is the ups and downs of the economy. As mentioned generating better job applications faster could arguably be most important on the back of an economic upturn. After the 2008 financial crisis, many of the jobs that were initially lost were recreated and needed to be filled. Although the year 2020 is clearly considered an anomaly (at least currently), this year serves to strengthen the point: in the U.S. millions upon millions of people were fired only to be rehired months later. If that process could somehow be streamlined, the gain could be quite significant.

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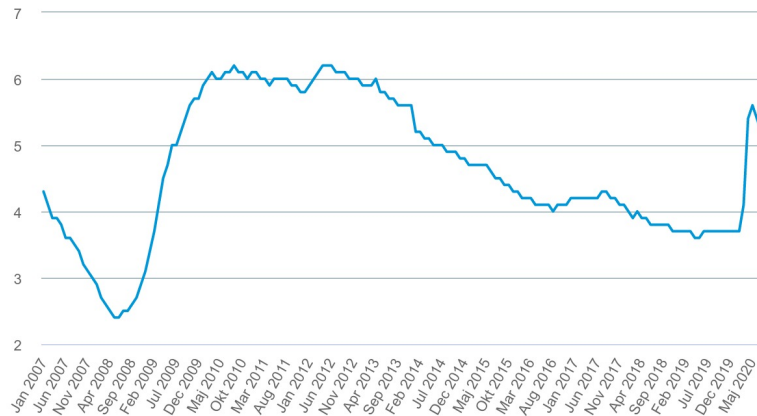Ydelse, køn og alder: Bruttoledige | Sæsonkorrigering og faktiske tal: Sæsonkorrigeret i pct. af arbejdsstyrken:
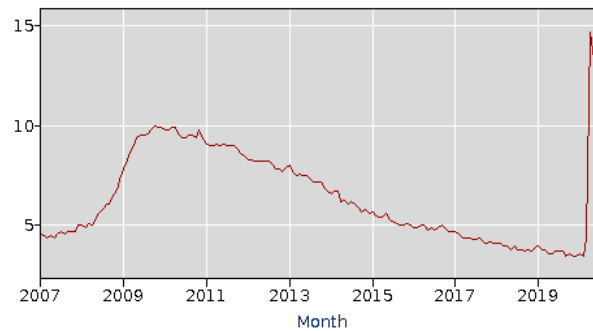

Figure 1: Unemployment rate in Denmark

Figure 2: Unemployment rate in the United States

2.2. Getting a job

2.2.1. The numbers behind the process of getting a job

How did people get their current job? Lou Adler tried answering just this: He conducted an online survey on LinkedIn based on 3000 answers, where in most of these answers came from those actually hiring.

The results are outlined in fig. 3 on the following page.

Here we can see, that active candidates only represent 5-20 percent of the entire job market. Around 15-20 percent are only tiptoeing around the idea of getting a new job, while the rest are passive candidates (meaning people who are satisfied in their current position.).

Based on these graphs, we can see that at the very minimum, 42 percent of people are hired based on networking, and that is only if you already have a job. Whilst this
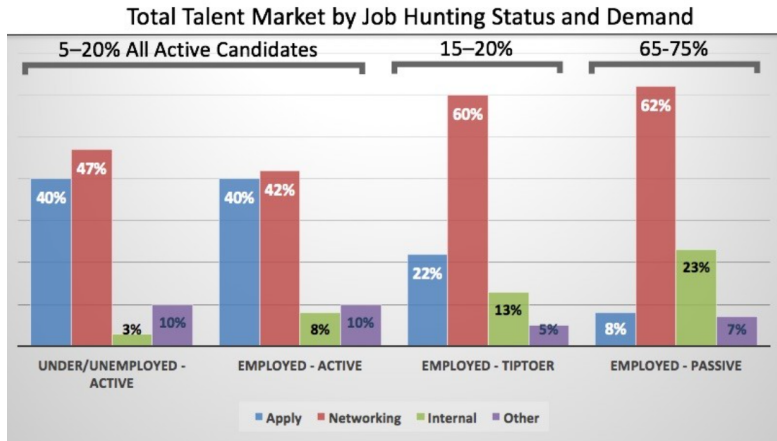
Figure 3: Caption?

percentage only goes up, the opportunity for a job seeking person to get hired based on an application goes down. This reflects the most effective way to get hired is through internal applications or networking. On the flip side, it also nicely illustrates just how stiff competition there actually is, if your only way of getting hired is through sending applications.

When you send out an application, there is an 8.3 percent probability, that they will actually invite you to a job interview. Furthermore it takes around 10-15 interviews, before one gets a job offer. Obviously it varies depending on educational background, job type and many other factors, but this is the average. Some quick math ($(((100/8,3)*10)+((100/8,3)*15))/2 = 150..)$ tells us, that it will take an average of 150 ish applications before one gets a job offer.

All these applications add up, before one can reap the reward. According to a study conducted surveying 2000 Americans, by recruitment agency Randstad US discovering the "art of the job hunt", it takes an average of five months from when the job search begins, until one actually lands the job.

To add insult to injury, after all the hard work of creating an application, it can take quite some time before the hiring managers actually respond, that is if they ever bother answering your application to begin with. It takes around 3 days between they receive the application, before they answer. This is the case for the most in demand roles in society, for the less in demand roles such as writers, nurses and unskilled labour, it can be anywhere from 10 to over 30 days. On average one can expect to hear back from employers within a week 41 percent of the time. Within a couple of weeks 85 percent of the time.

Below some of the more popular jobs are illustrated as a function of interview rate on the left and response delay on the left: The interview rate is further supported from a danish online survey, that concluded that 65 percent of people get an interview within the first 15 applications and 82.5 percent of people get an interview within the first 30 applications.

Role	Interview Rate (%)	Role	Response Delay (# days)
Property Managers	10.2%	Property Managers	1.1
Project Managers	9.3%	Project Managers	2.9
Human Resources Workers	4.7%	Human Resources Workers	3.2
Marketing Specialists	9.7%	Marketing Specialists	2.2
Software Developers	6.1%	Software Developers	3.0
Mechanical Engineers	10.1%	Mechanical Engineers	3.0
Kindergarten Teachers	10.6%	Kindergarten Teachers	3.7
High School Teachers	5.3%	High School Teachers	1.0
Designers	8.3%	Designers	6.9
Writers	6.8%	Writers	11.1
Sales Representatives	5.9%	Sales Representatives	6.1
Office Managers	8.6%	Office Managers	3.1
Customer Service Representatives	10.0%	Customer Service Representatives	2.4

Figure 4: Caption?

2.2.2. Optimize ones interview rate

There are many factors to consider, if one wishes to optimize ones chances of getting an interview, one of the more empirical proven ones is what time and day one sends their application. To get the highest chances, you have to apply between early Tuesday morning and Thursday before noon using the employers local time. Monday is even better, increasing your chances by 46 percent in regard to the average. If one should apply on another day, the most important factor is that it's done before 10AM, since the interview chances drops below 5 percent for the majority of late evening applications.

One thing that is crucial, is how long ones resume is: Having between 475-600 words is the optimal length, where the maxima is at ca. 535 words. The optimal word count is illustrated in fig. 5.
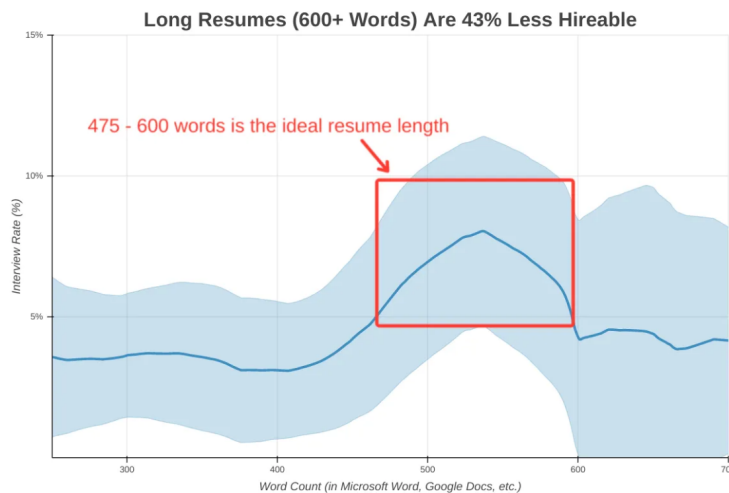

Figure 5: Optimal length of a CV

Perhaps one of the most influential condition of wether you get an interview, is how fast you are at applying: Based on 30000 data points from the company Speedrecruiters, you need to apply within the first 14 days to have a practical chance of getting an interview. it is such that 50 percent of the people who got an interview for the job applied within the first week, and 75 percent of those who got an interview applied within the first 14 days, whilst the chances of getting an interview thereafter dwindles exponentially.

Other factors that influence the interview rate are as following:

1. Being a woman increases the chances by 48 percent.

2. Being older, but no older than 35, increases the interview rate by 25 percent.

3. Having more than one degree, increases ones chances by 22 percent.

4. Adding industry buzzwords increases your chances by 29 percent. e.g. If you are a software developer, then add buzzwords such as machine learning, artificial intelligence etc.

5. Demonstrating earlier job results using numbers increases chances by 40 percent. e.g. "Increased profits by 20 percent from Q3 to Q4"

6. Listing achievements, where you weren't in charge, but only a helping hand decreases your chances by 50 percent e.g. "Helped management organize financial reports" instead of "Organized financial reports"

7. Using leadership affiliated buzzwords increases your chances by 51 percent

8. Not using personal pronouns in the employment section increases your chances by 55 percent.

9. Including a key skills section and buzzwords of the key skills increases your chances by 59 percent

10. Start ones sentences with distinct action verbs, increases ones chances by 140 percent. e.g. Do "Developed a mainframe architecture that dramatically increased efficiency" instead of "After surveying people, the mainframe architecture that increases efficiency was developed by me"

2.3. Different expectations in a company

Often companies have different expectations for structures and information's about the CV, so it will be relevant for the application. Most of the time the companies expectations can be related to work experience and education, and a CV could either be long or short depends on which company the person is writing to. Some people can write a long CV, but it isn't necessarily a good CV, and people can write a short one but it isn't good enough. Both of these statements could have some information that are not relevant to the company's requirement. Still there are some other factors that can be included, and some companies would love to know what the person did in that particular year. In that

particular situation would be different from company to company, since those people who are working with humanities can have human related criteria for getting a job in this area. The same goes for IT where they have more work with a computer than any other people, because these jobs immerse themselves everyday with it. According to Computerworld it-jobbank, they have actually examined a total of 6700 job posting in the year of 2015 and 2019 where the company was sorting all categories that are related to IT, and they have published the top 10. It is shown between those years that the job-advertisements have more of a technical, structured and professional knowledgeable side than before. That is tough very common, since will take good technical skills to do a very good job with the programming, and structured can be a very important factor to have a good overview of a program, and even if a new person with almost zero experience had to look at that, it would still be possible to read trough the comments and understand it's functions. Below is the full result of the 6700 job-advertisements that has been thoroughly examinant.

Top 10 in 2019

1. Technical

2. Structured

3. Professional knowledge

4. Strong

5. Dynamic

6. Analytical

7. Responsible

8. Outgoing

9. Curious

10. Professional

Top 10 in 2015

1. Structured

2. Technical

3. Dynamic

4. Strong

5. Informal

6. Responsible

7. Professional

8. Outgoing

9. Analytical

10. Committed

Research have also revealed that the most popular sentence for writing a CV can get it easier to get a job in IT-companies Very popular to write:

- Good for creating an overview and structure

- Good for creating dialogue

- Good at articulating you in writing and orally

- Good at prioritizing your tasks

- Good at seeing connections

Not very popular to write:

- Good to collaborate and share your experiences

- Good for keeping a cool head

- Good at sharing your knowledge

- Good at innovating, challenging and finding untraditional solutions

- Good at uncovering and understanding customer needs

In the situation of the contents and the document setup, there can be often of those different kind of setups, there is one in particular and they are a comparative effectiveness research, and it's called Patient-Centered Outcomes Research Institute (PCORI). This organization have a purpose to fund research, so they can afterwords help patients and in the end try to make them better informed to look at their health that they face every day. They have a list to guide applicants who wants to work in the American Medical Association (AMA), and this is only one of the examples of a requirement for a company. In the situation of the contents and the document setup, there can be often of those different kind of setups, there is one in particular and they are a comparative effectiveness research, and it's called Patient-Centered Outcomes Research Institute (PCORI). It's to determine which work best for which patients and which pose the greatest benefits and harms. They have a list to guide applicants who are want specifically work here:

Header: Include the Principal Investigator's (PI's) full name in the top left corner of the page header on every page. Margins: Use at least half-inch margins. The header may fall within the top margin, but the body text should not begin closer than one half-inch from the edge of the page. Font: Use size 11 Calibri for the main body of the text. Figures, tables and captions may be size 8 font. Page Numbering: Each page must be numbered

consecutively for each PDF upload. Each section of an uploaded document must begin with page 1. Spacing: Use single spacing. Document Format: Upload all attachments in PDF format.

Even tough that applicants have wrote a good CV and they have used some good words to describe themselves, there is a chance where keywords come in as a very important factor. In the digital world where often people have to send applications online, and over 90 of all resumes and relevant information are being screened through an "Applicant Tracking System" (ATS). ATS is a scanning software system that is designed to scan a resume for "work experience, skills, education, and other relevant information." If it determines the resume is a good match for the position, it gets sent forward to the hiring manager. Every time the ATS will do test, and it will determine if the test is a passing grade or it will be delete, so it will not even reach out to the hiring manager. According to Caitlin Proctor it is stated that "Nearly 75 of resumes are rejected because they're not correctly formatted or keyword optimized." and there can be a lot of criteria to get to the job you want. So ind the end, the ATS is checking especially on five different elements when writing a resume, and that can be:

- Standard formatting

- Keyword optimization

- Send as a Word document

- Spell out abbreviations

- Include relevant information

2.4. Required and situational content of a CV

A CV is "a short account of one's career of qualifications prepared typically by an applicant for a position"1. When applying for a position within a firm some aspects of a CV are required. These requirements can come from the position or firm the CV is intended or from the definition of the CV itself. Putting aside the firm or positions requirements, all CVs must include the five following requirements to be defined as a CV: 11. Contact information 2. CV objective 3. Relevant skills 4. Work experience 5. Education 2The substance of each requirement varies from applicant to applicant. However, every CV must include these five requirements to be effective. A further explanation of each requirement is due: Contact information is required as the firm at the bare minimum must have some way to contact you should you be accepted for the position. CV objective is required as it specifies what and who the CV is intended and without it the CV can fill no purpose. Relevant skills are required as without it you have no relation to the CV objective. Work experience and Education is required as without it one has no qualifications. as a CV is an account of one's qualifications it is also possible to leave Education and Work experience empty if one has none. However it is then hardly an effective CV.3 Along with the requirements of CV there are also aspects which are situational. These vary and must likely the firm or position in which one is applying to will lay out these

aspects, or it is apparent from the position itself. If not specified it is difficult to know what to include. To little and one will under-qualified, to much and the CV will be to long4, excesses and unorganized. Therefore, it is essential to distinguish one's CV with the right quantity and quality of situational content. Lets examine some of the more typical situational content that could be included in a CV: 341. Professional association 2. Volunteer experience 3. Languages 4. Additional training courses 5. Publication 6. Awards/Honors 7. References 5The effectiveness of a CV can drastically change due to use of situational content. Therefore it is necessary to further explain each situational content: Professional association is any trade unions, learned societies, regulatory universities and other inter-professional societies. Many associations have certain prestiges and hold there member to a certain standard of quality. Therefore a professional association can improve a CV if relevant.67 Volunteer experience is any volunteer work relevant to the position. Languages is any spoken or written language relevant to the position. As most firms in our interconnected market interact with some multilingualism, languages can easily increase the quality of a CV. Additional training courses are any extra courses relevant to the position. Publication are any reports, books or other published materials that could show qualifications for the given position. Awards and honors are any university or professional awards or honors given that show qualification for thr given position. References are very situational, as putting references in a CV may make you seem unsure of yourself and in need of validation from others to show qualifications. However, if a CV has the right references it can show assure employers of your qualifications and past experience. 67

3. Analysis

4. Problem statement

5. Product description

6. Discussion

7. Conclusion

A. Gruppekontrakt

Arbejdsdagen

§1. Hver arbejdsdag startes med scrum-statusmøde, en dagsorden og valg af referent.

§2. Projektmål og -struktur revideres hver arbejdsdag.

§3. Alle deltager i alle samtaler om projektrelevante emner.

§4. Små opgaver kan uddelegeres til enkelte medlemmer, men alle skal have det fulde overblik.

§5. Visuelle hjælpemidler benyttes i videst mulige omfang – eksempelvis benyttes whiteboardet ved alle gruppemøder og -diskussioner.

Faglige forventninger

§1. Alle medlemmer skal vide, hvad gruppen laver.

§2. Faglige diskussioner holdes indenfor emnet.

§3. Visuelle forklaringer benyttes om muligt.

§4. Alle skal deltage nogenlunde ligeligt i såvel programmering som rapportskrivning.

§5. Aftalt hjemmearbejde skal overholdes.

§6. Produktet skal gennemgås og afleveres gennemarbejdet.

§7. Kode skal kommenteres.

§8. I udgangspunktet forventes timer brugt svarende til normeringen (ca. 20 timer om ugen for P1), og denne forventning kan om nødvendigt øges nær deadline.

Sociale forventninger

§1. Gruppens primære kontakt foregår gennem Messenger.

§2. Alle skal tjekke Messenger (mindst) dagligt.

§3. Gruppen mødes på campus alle hverdage, med mindre andet er aftalt.

§4. Alle møder på det aftalte tidspunkt, og der gives besked, hvis man er mere end et kvarter forsinket.

§5. Alle lytter til og respekterer hinandens person og meninger.

§6. Konflikter og uenighed løses ved demokratisk afstemning i gruppen.

Fravær

§1. Alle skal i udgangspunktet møde til alle forelæsninger og møder.

§2. Bliver man syg, eller har man anden god grund til fravær, gives der besked i rimelig tid.

Konsekvenser

§1. Gruppen kan når som helst stemme om, hvorvidt et gruppemedlem skal tildeles en advarsel.

§2. Uddeling af advarsel kræver almindeligt flertal blandt gruppens øvrige medlemmer.

§3. Er et gruppemedlem tildelt en advarsel, kan gruppen efter yderligere overtrædelser når som helst stemme om, hvorvidt gruppemedlemmet skal ekskluderes.

§4. Ekskludering kræver enstemmighed blandt gruppens øvrige medlemmer.

References

[1] Mads Lundby Hansen and Carl-Christian Heiberg. *Stigning på 200.000 i reel ledighed. Stigningen i Corona-ledighed slår stigningen under finanskrisen, 80'er-krisen og oliekriserne*. Danish. CEPOS. May 2, 2020. URL: https://cepos.dk/artikler/stigning-paa-200000-i-reel-ledighed/ (visited on 10/16/2020).