

# Chancen und Gefahren automatischer Sprachverarbeitung

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## Inhalt

Computerlinguistische Anwendungen haben sich im Alltag durchgesetzt: Suchmaschinen, Rechtschreibkorrektur, maschinelle Übersetzung, Spracherkennung usw. stehen jedem auf Computer und Mobiltelefon zur Verfügung. Die Computerlinguistik hilft allerdings nicht nur uns Endanwendern, sondern auch dem Handel, mehr über seine Kunden zu erfahren, der Industrie, personalisierte Werbung zu platzieren, autoritären Staaten, Microblogeinträge zu zensieren, Geheimdiensten, Telefongespräche und Emails nicht mehr nur auf Stichwörter, sondern auch auf Inhalte hin zu durchsuchen.

Im Seminar sollen Methoden und Anwendungen aus den Bereichen Sentiment Analysis, maschinelle Übersetzung, Textmining, NLP und Social Media, Computational Advertising usw. untersucht und im Hinblick auf ihre gesellschaftlichen und ethischen Auswirkungen hinterfragt werden:

- Wo ist die Grenze zwischen "cooler" und gefährlicher Forschung?
- Sind wir gerade dabei die Atomphysiker des 21. Jahrhunderts zu werden?
- Sollen wir uns in der Forschung Beschränkungen auferlegen, oder geht alles?
- Wie groß ist unsere Freiheit in der Forschung angesichts des hohen Einflusses von Industrie und Militär in der Forschungsförderung?

Im Seminar werden wir uns mit computerlinguistischen Methoden und Techniken beschäftigen, und diese im Hinblick auf ihr Potential, die Gesellschaft zu beeinflussen und unsere Freiheit zu gefährden, bewerten. Es wird aber auch um Anwendungen gehen, die dem mündigen Bürger helfen, Informationen zu gewinnen, um gesellschaftliche und politische Veränderungen herbeizuführen.

## Termine, Themenvorschläge

**24.10.2013**

**Einführung, Motivation, ...**

**31.10.2013**

**Geschichte – 2. Weltkrieg, Vietnam, Förderung für KI und CL durch das Militär:**

(Shapley, 1972; Glantz & Albers, 1974; Holden, 1975; Edsall, 1975; Thompson, 1986; Schuler & Jacky, 1989; Beusmans & Wieckert, 1989; Winograd, 1991; Yen, 2004; Popp et al., 2004; Coffman et al., 2004; Bradford, 2006; Rubenstein et al., 2008; Cho, 2013; Hajaj et al., 2013)

**zur Vorbereitung:** (Winograd, 1991)

**07.11.2013**

**Wissenschaftsethik – andere Disziplinen:** Informatik, Ingenieurwissenschaften, Biowissenschaftlern, Medizin

**Wie funktioniert Google?**

(Levy, 2011; Schmidt & Cohen, 2013)

**zur Vorbereitung:** Fragen zu ethischen Leitlinien in anderen Wissenschaften oder Fragen zu Google

**14.11.2013**

**Microblogs – Zensur:**

**Referat: Chen Li** – (Bamman et al., 2012b; Huang et al., 2013; Xu et al., 2013)

**optional:** – (Sleeper et al., 2013; Das & Kramer, 2013; Zhu et al., 2013)

**zur Vorbereitung:** (Bamman et al., 2012b)

**21.11.2013**

**Entity Linking:**

**Referat: Anja Summa** – (Guo et al., 2013b; Liu et al., 2013)

auch: [http://www.darpa.mil/Our\\_Work/I2O/Programs/Deep\\_Exploration\\_and\\_Filtering\\_of\\_Text\\_\(DEFT\).aspx](http://www.darpa.mil/Our_Work/I2O/Programs/Deep_Exploration_and_Filtering_of_Text_(DEFT).aspx)

und: [http://www.nist.gov/tac/publications/2012/presentations/KBP2012\\_Entity\\_Linking\\_tasks\\_overview.pdf](http://www.nist.gov/tac/publications/2012/presentations/KBP2012_Entity_Linking_tasks_overview.pdf)

**Microblogs – Soziale Faktoren:**

**Referat: Raphael Schumann** – (Argamon et al., 2009; Bergsma & Van Durme, 2013)

**optional:** (Burger et al., 2011; Bamman et al., 2012a; Ciot et al., 2013; Hasegawa et al., 2013; Eisenstein et al., 2011; Rangel et al., 2013; Nguyen et al., 2013a)

**zur Vorbereitung:** (Csomai & Mihalcea, 2008) oder (Milne & Witten, 2008)

**28.11.2013**

**Microblogs – Inhaltserschließung:**

**Referat: Eleftherios Matios** – (Diao & Jiang, 2013)

**optional:** (Guo et al., 2013a; Eisenstein, 2013; Chua & Asur, 2013; Grinberg et al., 2013; Kairam et al., 2013; Tsur & Rappoport, 2013)

**Microblogs – Lokalisierung:**

**Referat: Xenia Kühling – wegen Krankheit ausgefallen** – (Cheng et al., 2013)

**Referat: Carolin Günzel** – (Schulz et al., 2013)

**optional:** – (Fink et al., 2009; Gelernter & Mushegian, 2011; Varga et al., 2013; Han et al., 2013; Crooks et al., 2013; Jurgens, 2013)

**zur Vorbereitung:** (Diao & Jiang, 2013) oder (Cheng et al., 2010)

**05.12.2013**

**Soziale Netzwerke und NLP – soziologische, psychologische Phänomene etc.:**

**Referat: Hans-Martin Ramsl** – (Agarwal et al., 2013)

**Referat: Danny Rehl** (Fokus auf Facebook) – (Das & Kramer, 2013)

**optional:** – (Rao et al., 2011; Cano et al., 2013; Nitta et al., 2013; Abu-Jbara et al., 2013; Burke et al., 2013; El-Arini et al., 2013)

**zur Vorbereitung:** (Elson et al., 2010) oder (Sleeper et al., 2013)

**12.12.2013**

**Sentiment Analysis – Foren:**

**Referat: Angela Schneider** – (Qiu et al., 2013) und auch ein wenig (Qiu & Jiang, 2013; Chen et al., 2013)

**Sentiment Analysis – Meinung in der Politik:**

**Referat: Maximilian Bacher** –  
(Arunachalam & Sarkar, 2013)

**optional:** (Mukherjee & Liu, 2013; Mukherjee et al., 2013; Lin et al., 2013; Bhosale et al., 2013; Cohen & Ruths, 2013)

**Sentiment Analysis – eher “traditionell”:**

**Referat: Patrick Claus** – (Riloff et al., 2013)

**optional:** (Sokolova & Lapalme, 2011; Volkova et al., 2013; Zhou et al., 2013)

**zur Vorbereitung:** (Qiu et al., 2013) oder (Arunachalam & Sarkar, 2013) oder (Riloff et al., 2013)

**19.12.2013**

**Psychologie – Erkennung von Lügen, etc.:**

**Referat: Angelika Kirilin** – (Bachenko et al., 2008)

**Referat: Jasmin Schröck** – (Ott et al., 2011)

**Referat: Sabrina Mänz** – (Takase et al., 2013)

**optional:** (Burgoon et al., 2003; Zhou et al., 2003; 2004; Bond & Lee, 2005; Hancock et al., 2005; Graciarena et al., 2006; Feng & Hirst, 2013; Li et al., 2013a; Resnik et al., 2013; Li et al., 2013b; 2013c; Ott et al., 2013)

**zur Vorbereitung:** (Bachenko et al., 2008) oder (Ott et al., 2011) oder (Takase et al., 2013)

**09.01.2014**

**Microblogs – Soziale Faktoren:**

**Referat: Erwin Glockner** – (Hasegawa et al., 2013)

**optional:** (Argamon et al., 2009; Burger et al., 2011; Bamman et al., 2012a; Ciot et al., 2013; Bergsma & Van Durme, 2013; Eisenstein et al., 2011; Rangel et al., 2013; Nguyen et al., 2013a)

**Psychologie – Erkennung von Depression, etc.:**

**Referat: Yulia Pilkevich** – (Stirman & Pennebaker, 2001; Lott et al., 2002; Rude et al., 2004; Cohn et al., 2004; Le et al., 2011; Pestian et al., 2012; Resnik et al., 2013; Lamb et al., 2013; De Choudhury et al., 2013; Nguyen et al., 2013b)

**Psychologie – Macht, Einfluß, etc.:**

**Referat: Lyubov Nakryko** – (Prabhakaran et al., 2013)

**optional:** – (Mayfield et al., 2013; Prabhakaran & Rambow, 2013)

**zur Vorbereitung:** (Hasegawa et al., 2013) oder (Prabhakaran et al., 2013)

**16.01.2014**

**Microblogs – Autorenerkennung:**

**Referat: Madeline Remse** – (Wang et al., 2013)

**Referat: Katharina Sowa** – (Schwartz et al., 2013)

**optional:** – (Qian & Liu, 2013)

**Anonymisierung (in der medizinischen Domäne – und darüberhinaus?):**

**Referat: Jonas Placzek** – (Narayanan & Shmatikov, 2008)

**optional:** (Uzuner et al., 2007; Szarvas et al., 2007; Wellner & Pustejovsky, 2007; Friedlin & McDonald, 2008; Uzuner et al., 2008; Hirschman & Aberdeen, 2010; Benitez & Malin, 2010)

**zur Vorbereitung:** (Narayanan & Shmatikov, 2008) oder (Schwartz et al., 2013) oder (Qian & Liu, 2013)

**23.01.2014**

**Gesprochene Sprache und Dialogsysteme:**

**Julian Gerhard** – (Shepstone et al., 2013)

**Referat: Elisa Starke** – (Johnston et al., 2013)

**Referat: Leo Born** – (Rakov & Rosenberg, 2013)

**optional:** – (Traum, 2013; Rizzo et al., 2013; Pérez-Rosas & Mihalcea, 2013; Cummins et al., 2013; Evans et al., 2013; Federico et al., 2013; Kim et al., 2013; Bigot et al., 2013; Hatmi et al., 2013)

**zur Vorbereitung:** (Shepstone et al., 2013) oder (Johnston et al., 2013) oder (Rakov & Rosenberg, 2013)

**30.01.2014**

**Essay Scoring etc.:**

**Referat: Joachim Bingel** – (Pitler & Nenkova, 2008) und evtl. (Ganjigunte Ashok et al., 2013)

**optional:** – (Schwarm & Ostendorf, 2005; Dikli, 2006; Burstein et al., 2010; Chen & Zechner, 2011; Chen & He, 2013; Guinaudeau & Strube, 2013)

**Medizin: Informationsextraktion, Kommunikation, etc.:**

**Referat: Mirjam Eppinger** – (Paul & Dredze, 2011)

**Referat: Thomas Haider** – (Ferrucci et al., 2013)

**optional:** – (Wallace et al., 2013; Chen, 2013; Sarioglu et al., 2013; Paul & Dredze, 2013; Rebholz-Schumann et al., 2013; Teodoro & Naaman, 2013)

**zur Vorbereitung:** (Paul & Dredze, 2011) oder (Pitler & Nenkova, 2008) oder (Ferrucci et al., 2013)

**06.02.2014**

**Zusammenfassung, Diskussion**

**zur Vorbereitung: Offene Fragen, Kommentare, Diskussionsvorschläge – zum gesamten Semester** (mir bitte zusenden bis spätestens 05.02.2014, 20 Uhr)

**Weitere Themenvorschläge: Maschinelle Übersetzung – DARPA BOLT Programm:** (Zbib et al., 2012)

auch: [http://www.darpa.mil/Our\\_Work/I20/Programs/Broad\\_Operational\\_Language\\_Translation\\_\(BOLT\).aspx](http://www.darpa.mil/Our_Work/I20/Programs/Broad_Operational_Language_Translation_(BOLT).aspx)

**Bemerkungen:**

**Leistungsnachweise:** Lektüre und aktive Teilnahme (1/3), Referat (1/3), Hausarbeit (1/3). Hausarbeit: 8-10 Seiten (Proseminar), 12-15 Seiten (Hauptseminar) inkl. Bibliographie. Die Hausarbeit kann auch per Email an mich geschickt werden, aber *nicht*

als Word-Datei sondern nur als PDF-Datei. – Ich empfehle, wissenschaftliche Texte mit Latex und Bibtex zu verfassen.

Regelmäßige Teilnahme (d.i. nicht mehr als einmal unentschuldigtes Fehlen) ist Voraussetzung für den Scheinerwerb. Zu jeder Sitzung müssen jeweils zwei Fragen (!) zu einem Papier abgegeben werden, das in der aktuellen Sitzung vorgestellt wird. Abgabe entweder per Email bis spätestens 13 Uhr am Tag der Sitzung oder schriftlich direkt vor der Sitzung. Dies geht in die Bewertung für aktive Teilnahme am Seminar ein.

**Literatur:** Viele Papiere können direkt aus der *ACL Anthology* kopiert werden (<http://acl.ldc.upenn.edu/>), insbesondere alle Papiere der (*E/NA*)*ACL*-, *Coling*- und *EMNLP*-Konferenzen, alle Workshops, die im Rahmen dieser Konferenzen veranstaltet wurden und die Zeitschrift *Computational Linguistics*. Papiere, die von der *AAAI* publiziert wurden (*AAAI*-Konferenz, *AAAI*-Workshops, *AAAI*-Symposia, etc.) sind in der *AAAI Digital Library* verfügbar (<http://www.aaai.org/Library>). – Die meisten weiteren Zeitschriften sind elektronisch verfügbar über die UB (<http://rzblx1.uni-regensburg.de/ezeit/search.phtml?bibid=UBHE>) – oder stehen dort im Regal.

**Sprechstunde:** Auf Vereinbarung (Email, Telefon) bei mir im Büro, ggf. auch im Anschluß an das Seminar.

#### **Hausarbeiten:**

Maximal 8-10 Seiten (Proseminar), 12-15 Seiten (Hauptseminar) inkl. Abbildungen, inkl. Literaturverzeichnis.

**Inhalt:** Fokus auf das vorgestellte Papier; NICHT *Related Work*-Kapitel referieren, wenn die entsprechenden Papiere nicht gelesen wurden; Evaluierung berichten; WICHTIG: mit eigener Meinung oder Bewertung abschließen.

**Stil:** Wissenschaftlichkeit drückt sich nicht durch lange, komplizierte Sätze und exzessiven Gebrauch von Fremdwörtern aus – deshalb bitte kurze Sätze, einfache Sprache; Hausarbeiten vor der Abgabe Korrektur lesen oder Korrektur lesen lassen (s. auch *Dos and dongs: Hinweise zur Abfassung wissenschaftlicher Arbeiten* von Prof. Frank – [http://www.cl.uni-heidelberg.de/~frank/materials/dos\\_and\\_dongs.pdf](http://www.cl.uni-heidelberg.de/~frank/materials/dos_and_dongs.pdf)). Ich schätze Wikipedia als Gegenstand meiner Forschung sehr, nicht aber als Quelle für wissenschaftliche Arbeiten. Hausarbeiten, die Wikipedia (oder auch andere allgemeine Enzyklopädien) als Beleg zitieren, werde ich zurückweisen. Bitte lesen und zitieren Sie Fachliteratur!

Seminararbeit (d.i. eine praktische Arbeit) ist auch möglich. Sollte durch 5-6 Seiten Bericht begleitet werden.

**Abgabetermin:** bis spätestens 6. März 2014; per Email als PDF-Datei (kein Microsoft Word!) oder ausgedruckt per Post – Matrikelnummer und Studiengang nicht vergessen!

## References

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