

CURRICULUM VITAE

Koen Deschacht

General information

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Education

Jan. 2006 - May 2010 Doctor in Engineering, computer science
Katholieke Universiteit Leuven
Sept. 2001 - Sept. 2005 Master in informatics (magna cum laude)
Katholieke Universiteit Leuven

Work experience

Nov. 2018 - present Founder, Stepwise, Belgium
Jan. 2017 - Nov. 2018 Blockchain developer, Cegeka, Belgium
Dec. 2015 - Nov. 2016 CTO, ScriptBook NV, Belgium
July 2015 - Nov. 2015 Data scientist and full stack developer, NoisyChannels, Belgium
Apr. 2014 - July 2015 Web developer, Crelan, Belgium
Apr. 2014 - present Founder and full stack developer, Terashare, <http://terashare.net>
Apr. 2012 - Apr. 2014 Full stack developer, Foreach bvba, Belgium
Aug. 2011 - Apr. 2012 Technical lead, Cult, San Francisco, US
Jan. 2006 - May 2011 Postdoctoral researcher, Katholieke Universiteit Leuven, Belgium
Sep. 2005 - Jan. 2006 Research assistant, Katholieke Universiteit Leuven, Belgium
Feb. 2004 - present Member of the board, Verbal Vision vzw, Belgium
Aug. 2001 - Nov. 2003 Web developer, Verbal Vision vzw, Belgium

for a complete list of projects, see appendix 1

Technical skills

Programming languages Java (10 yrs), HTML (6 yrs), JavaScript (5 yrs), Python (2 yrs), Objective C (0.5 yrs), C# (1 yr), SQL (1 yr), Rust (0.5 yrs), Bash shell scripts (0.5 yrs), NodeJS (0.5 yrs)
Applications Web: backend, fronted, single page JavaScript applications, REST API's
Mobile: Android, iOS
Machine learning: classification, prediction, clustering
Frameworks Angular, Vue.js, Hyperledger, Ethereum, Xamarin, numpy, scikit-learn, Spring MVC, JPA, Hibernate, Flask micro web framework, Apache Solr, Twitter bootstrap, JQuery
Databases MySQL, MS SQL, Oracle SQL, Apache Cassandra
Tools IntelliJ, Eclipse, PyCharm, Android Studio, Jira, Bamboo, Confluence, Zabbix, Git
Algorithms Machine learning, Bayesian models, regression models

Personal skills

Passionate software developer fluent in java, python and javascript with the ability to learn new languages and frameworks quickly.

Experience in developing and implementing complex algorithms such as developing blockchain solutions (Cegeka), automatic analysis of emails and attachments (NoisyChannels), crawling large amounts of web data (NoisyChannels, ScriptBook, Cult), machine learning (NoisyChannels, ScriptBook, Crelan), building a high performance key-value store (count-db), generating social recommendations (Cult), relaying UDP traffic and performing NAT hole punching (Terashare).

Proven track record in achieving deliverables and honouring deadlines, with experience in more than 9 software projects and two 4-year scientific research projects.

Good communication skills and experience in working collaboratively in teams, with one year experience as CTO in ScriptBook and one year experience as technical lead in Foreach.

Languages

Dutch Mother tongue

English Fluent

French Sufficient

References

Jan De Bleser (co-founder Terashare)

+32 473 26 24 77, Thonetlaan 52, BE-2050 Antwerpen, Belgium

Jan Nuyens (CEO of Foreach)

+32 3 290 79 11, St-Bartholomeusstraat 130, BE-2170 Merksem, Belgium

Gon Zifroni (founder Cult)

+1 415 400 60 89, 1175 Folsom Street, San Francisco, CA 94103, US

Prof. Marie-Francine Moens (head of the LIIR research group)

+32 16 32 53 83, Celestijnenlaan 200A, BE-3001 Leuven, Belgium

Ingrid Tiggelovend (chair of Verbal Vision vzw)

+32 486 67 83 99, Maria Theresialei 38, BE-2930 Brasschaat, Belgium

Hobbies

sailing, marathon running, bicycle touring (July to Dec. 2010: bicycle trip Belgium-Iran-Belgium)

APPENDIX 1: PAST PROJECTS

Note: projects marked with § have been performed while employed at Cegeka, projects marked with * have been performed while employed at Foreach bvba

MICROSOFT from december 2017 to february 2018 §

Position	Blockchain developer
Context of the projects	Microsoft has developed a new cloud offering, App Builder, which will allow business stakeholders to rapidly prototype blockchain applications in a variety of blockchain technologies. Cegeka developed, alongside Microsoft developers, multiple modules of this new cloud package.
Team	2 business analysts, 2 developers
Achievements	We developed an easy-to-use wizard in Xamarin (Android, IOS, UWP) to fully specify a blockchain application, and automatically generates a solidity contract or enterprise smart contract, and the necessary config files to deploy these contracts to App Builder.
Tasks and solutions	<ul style="list-style-type: none">✓ Develop wizard UI: <i>C# + Xamarin Forms</i>✓ Generate ethereum contracts: <i>solidity</i>✓ Generate enterprise smart contracts: <i>C#</i>

KPMG NETHERLANDS from june 2017 to december 2017 §

KPMG is a professional service company and one of the Big Four auditors.

Position	Blockchain developer
Context of the projects	When managing and auditing SPV's, multiple sources of financial transactions need to be reconciled. This is a labour intensive process, prone to errors.
Team	1 data scientist / blockchain developer, 1 functional analyst, 1 business analyst
Achievements	We developed an application that combines an artificial intelligence algorithm with a blockchain to drastically reduce this manual work, and to increase ease of auditing.
Tasks and solutions	<ul style="list-style-type: none">✓ Store transactions on blockchain: <i>corda</i>✓ Automatic reconciliation of transactions: <i>java + custom clustering algorithm</i>✓ Web-interface to view balance sheet and audit transactions: <i>angular 4 + java</i>

AMSTERDAM TRADE BANK from march 2017 to may 2017 §

Amsterdam Trade Bank is a Dutch bank that focuses on trade financing for companies wishing to do business in Russia and former Soviet states.

Position	Blockchain developer
Context of the projects	When performing international trade tracking goods and their financing requires trust between the different parties. Blockchain technologies can partially alleviate this need for trust.
Team	1 business analyst, 1 functional analyst, 3 developers
Achievements	We developed an application that allowed for the tracking of goods from producer to consumer, including the financing of the goods.

Tasks and solutions

- ✓ Frontend: *angular 2 application*
- ✓ Backend: *java + web3j*
- ✓ Blockchain: *ethereum*

KBC from january 2017 to march 2017 §

KBC is one of the largest bank and insurance companies in Belgium and active in Central and Eastern Europe.

Position	Webdeveloper
Context of the projects	When a customer buys a new car using a car loan from KBC, a large amount of paperwork is involved between the customer, the car salesperson and KBC.
Team	1 functional analyst, 2 web developers, 1 blockchain developer
Achievements	We developed an application that allowed for the easy tracking of the car sale and insurance by the different parties

Tasks and solutions

- ✓ Frontend: *angular 2*
- ✓ Backend: *nodejs + express*
- ✓ Blockchain: *hyperledger*

SCRIPTBOOK from december 2015 to november 2016

ScriptBook is a start-up that develops text analysis algorithms to forecast the commercial and critical success of movies based on a multi-level analysis of the screenplay.

Position	CTO
Context of the projects	An existing proof-of-concept was drastically improved to take into account a large number of different models analysing the screenplay, and to produce accurate, reliable and repeatable forecasts. The angular user interface was redeveloped from the ground up.
Team	CTO, 1 web developer, 4 data scientists
Achievements	In 1 year we developed a forecasting system that outperforms all other automatic systems and human experts on predicting the US box office. Product is currently being tested by a major US studio, a US film funds and a European distributor.

Tasks and solutions

- ✓ Crawl a large number of websites: *python + auto scaling AWS instances*
- ✓ Analyse the text of the screenplay: *python + scikit-learn + nltk + lda*
- ✓ Generate forecasts: *python + numpy + scikit-learn*
- ✓ Show and filter results in web-interface: *HTML 5 + angular JS + flask*

NOISYCHANNELS from july 2015 to november 2015

NoisyChannels is a start-up that develops text analysis algorithms to assist knowledge workers in operational processes.

Position	data scientist and full stack developer
Context of the projects	development of proof-of-concept of automatic classification algorithms of customer

emails based on an of the content and attachments
 development of a crawler and automatic classifier of news messages for social secretariats

Team 1 business analyst, 1 datascientist, 1 developer

Achievements in 3 months we developed two separate solutions for two of the biggest social secretariats in Belgium and one large insurance company, resulting in the first sale for NoisyChannels

Tasks and solutions

- ✓ Crawl a large number of websites: *java in an azure cloud environment*
- ✓ Filter websites based on annotations of customers: *java + Stanford CoreNLP*
- ✓ Show and filter results in web-interface: *HTML 5 + angular JS + twitter bootstrap*
- ✓ Parse customer emails and attachments: *java + tesseract OCR + apache PDFBox*
- ✓ Classify emails: *java + Stanford CoreNLP*

CRELAN ONLINE from april 2015 to july 2015

Crelan is a retail bank and insurance company with over 1.700 employees and 430.000 customers in Belgium.

Position java webdeveloper

Context of the project development of the MIFID questionnaire in Crelan Online and Agent Portal

Team 4 developers, 3 functional analysts

Achievements joined team halfway in the project that was running late, but achieved deadline and managed to add several unbudgeted features

Tasks and solutions

- ✓ Add to existing website backend: *java + struts + Oracle RDBMS*
- ✓ Add to existing website frontend: *HTML5 + jquery*

TERASHARE.NET from april 2014 to present

Terashare is a P2P application that allows people to send large files for free. It uses the bittorrent protocol to send files reliably, fast and secure.

Position full-stack developer

Context of the project development of new application and website

Team 2 developers

Achievements successful launch, growing user base

Tasks and solutions

- ✓ Create website backend and REST api: *python + django + mysql*
- ✓ Create website frontend: *HTML5 + angular + jquery + twitter bootstrap*
- ✓ Create application for windows, mac en linux: *python + nsis for windows installer*
- ✓ Create NAT hole puncher and UDP relay servers: *python*

VOKA from december 2013 to april 2014 *

VOKA (Vlaams netwerk van ondernemingen) is an employers' organization in Flanders, representing over 18.000 companies in Flanders and Brussels.

Position backend developer

Context of the project Improve speed and responsiveness of existing voka.be website

Team 3 backend developers
Achievements More than 10x average speedup, loading of slowest pages went from 3 minutes to 2 seconds.
Technical methodology:
✓ Umbraco CMS + many custom .NET modules

RESTO.BE from juli 2013 to november 2013 *

Resto.be is the largest restaurant site in Belgium, with more than 3000 affiliated restaurants.

Position full-stack developer, scrum master
Context of the project expand existing website and search page with location based results.
Team 1 designer, 4 backend developers
Achievements project successfully finished on time. The new website gives users better search results by taking into account their current location.
Tasks and solutions
✓ Expand existing search engine to take into account the current location of the user, and to group results by location: *apache solr*
✓ Modify existing website to feature locations prominently: *java + spring*
✓ Modify existing REST api to return location information: *java + spring + MS SQL*

DE TIJD from december 2012 to june 2013 *

'De Tijd' is a Belgian newspaper that focuses on business and economics.

Position full-stack developer, technical lead
Context of the project For the development of a new tablet app, we developed a REST API and modified the editorial website used by the journalists.
Team 1 frontend developer, 7 backend developers. We worked in close collaboration with a team of 4 developers from "In The Pocket", who developed the actual app for iOS and Android.
Achievements Project successfully finished on time. The app was then considered by many the best tabled app for any newspaper in Belgium.
Tasks and solutions
✓ Modify existing backend websites that allow journalists to write articles, select and add pictures and layout the articles and pages: *java + spring + thymeleaf + oracle SQL*
✓ Create a new module to render articles to a subset of HTML5 to be passed to the app: *java + spring + thymeleaf + oracle SQL*
✓ Create a REST api to server rendered articles, images and other assets: *java + spring*

RESTO.BE from april 2012 to nov 2012 *

Resto.be is the largest restaurant site in Belgium, with more than 3000 affiliated restaurants.

Position front-end developer
Context of the project New javascript app to streamline reservations for restaurants
Team 3 frontend developers
Achievements Project successfully finished.
Tasks and solutions:
✓ Create a REST api to access restaurant reservations: *java + spring + MS SQL*
✓ Show reservations in app: *javascript + dojo*

- ✓ Allow restaurant owners to assign individual reservations to tables: *javascript canvas*

CULT from august 2011 to april 2012

Cult was a startup based in San Francisco that developed a location based social network, connecting people in a certain location (e.g. the Guggenheim museum) to other people in similar locations around the world.

Position full-stack developer, IOS app developer
Context of the project Development of backend, frontend and website for new social network.
Team 1 fulltime developer, 2 part-time developers, 1 designer, led by founder
Achievements app, website and REST api successfully finished under difficult circumstances.
Tasks and solutions:

- ✓ Crawl and cluster locations from google maps: *java + cassandra*
- ✓ Develop website: *HTML5 + javascript + python + django*
- ✓ iOS app: *objective c*

APPENDIX 2: PATENTS AND SCIENTIFIC PUBLICATIONS

Patents

1. US Patent 2011/0119050. Method for the automatic determination of context-dependent hidden word distributions, Koen Deschacht and Marie-Francine Moens.
2. US Patent 61/546,409. Multilocal Implicit Social Networking, Gon Zifroni, Koen Deschacht and Yuval El-Hanany, filed on Oct 12, 2011.

Scientific publications

1. Deschacht, Koen and Moens, Marie-Francine (2012) The Latent Words Language Model, Computer Speech and Language, Elsevier. (in press)
2. Deschacht, Koen (2010) Weakly supervised methods for information extraction, PhD dissertation, K.U.Leuven.
3. Deschacht, Koen and Moens, Marie-Francine (2007) Text Analysis for Automatic Image Annotation. In Proceedings of the 45th Annual Meeting of the Association for Computational Linguistics.
4. Deschacht, Koen & Moens Marie-Francine (2009) Using the Latent Words Language Model for Semi-Supervised Semantic Role Labeling. In Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing.
5. Deschacht, Koen & Moens Marie-Francine (2009) The Latent Words Language Model. In Proceedings of the 18th Annual Belgian-Dutch Conference on Machine Learning.
6. Deschacht, Koen & Moens Marie-Francine (2008) Finding the Best Picture: Cross-Media Retrieval of Content. In C. Macdonald, I.Ounis, V. Plachouras & I. Ruthven (Eds.) Proceedings of the 30th European Conference on Information Retrieval. Lecture Notes in Computer Science 4956 (pp.539-546). Springer.
7. Deschacht, Koen, Moens, Marie-Francine and Robeyns, Wouter. (2007) Cross-Media Entity Recognition in Nearly Parallel Visual and Textual Documents, in Proceedings of the 8th RIAO conference on Large-Scale Semantic Access to Content (Text, Image, Video and Sound).
8. Poulisse, Gert-Jan, Moens, Marie-Francine, Dekens, Tomas & Deschacht, Koen (2010) News Story Segmentation in Multiple Modalities, Multimedia Tools and Applications.
9. Engels, Chris, Deschacht, Koen, Becker, Jan Hendrik, Tuytelaerts, Tinne, Van Gool, Luc & Moens, Marie-Francine (2010) Automatic Annotation of Unique Locations from Video and Text. In Proceedings of the British Machine Vision Conference 2010.
10. Arias, Javier, Deschacht, Koen & Moens, Marie-Francine (2009) Content Extraction from Multilingual Web Pages. In Aly R., Hauff, C. Hiemstra, D., Huybers, T. & De Jong, F. (Eds.), Proceedings of the 9th Dutch-Belgium Information Retrieval Workshop.
11. Deschacht, Koen and Moens, Marie-Francine (2006) Efficient Hierarchical Entity Classification Using Conditional Random Fields, Proc. o/t 2nd Workshop on Ontology Learning and Population.
12. Pham, Phi The, Deschacht, Koen & Moens, Marie-Francine (2008) Document Clustering with User Feedback. In Eduard Hoenkamp, Martine De Cock & Véronique Hoste (Eds.). Proceedings of the 8th Dutch-Belgium Information Retrieval Workshop (pp. 73-80).
13. Boiy, Erik, Deschacht, Koen & Moens Marie-Francine (2008) Learning Visual Entities and their Visual Attributes from Text Corpora. In Proceedings of the 5th International Workshop on Text-based Information Retrieval. IEEE Computer Society Press.
14. Boiy, Erik, Hens, Pieter, Deschacht, K. and Moens, Marie-Francine. (2007) Automatic Sentiment Analysis of On-line Text. In Proceedings of the 11th International Conference on Electronic Publishing, Openness in Digital Publishing: Awareness, Discovery & Access, June 13-15, 2007, Vienna Austria.
15. Vossen, Piek and Hoffman, Katja and De Rijke, Maarten and Tjong, Erik and Sang, Kim and Deschacht, Koen (2007) The Cornetto Database: Architecture and User-Scenarios, Proceedings of the 7th Dutch-Belgium Information Retrieval Workshop (DIR 2007).
16. Koen Deschacht and Marie-Francine Moens (2007) Text Analysis for Automatic Image Annotation, In Proceedings of the 19th Belgian-Dutch Conference on Artificial Intelligence (Dastani, M. and de Jong, E., eds.), pp. 260-267.
17. Deschacht, Koen and Moens, Marie-Francine (2006) Efficient Hierarchical Entity Classification Using Conditional Random Fields, 18th Belgian-Dutch Conference on Artificial Intelligence.