Christiaan van Buchem

Curriculum Vitae

Education

2018–2020 **Master of Science in Astronomy and Data Science**, *Leiden University*, Leiden, The Netherlands,
First master thesis: 'Using Faster R-CNN for component association in LOFAR data'.
Second master thesis: 'How do charged particles interact with the atmospheres of the Galilean moons?'
Expected graduation date: 29th of August, 2020

2014–2017 **Bachelor of Science in Astronomy**, *Leiden University*, Leiden, The Netherlands
As part of this bachelor I did a minor in Data Science. Bachelor thesis: 'Exploratory Analysis of Sz91 Transition Disk'.

2016–2017 **Data Science Minor**, *Leiden University*, Leiden, The Netherlands
This minor focused on teaching the basics of data analysis and pattern recognition in big data.

2010–2014 **International Baccalaureate Diploma**, *Copenhagen International School*, Copenhagen, Denmark

Work experience

2019–2020 **Head of the Faculty Council - Faculty of Natural Sciences**, *University of Leiden*, Leiden
As head of the Faculty Council I am responsible for leading the council meetings and for communication with the Faculty Board. Together with 3 other students I represent the student party ONS (Ondernemende Studenten Leiden).

2019–2020 **Teaching assistant**, *Leiden Observatory*, Leiden
Teachers assistant position for the Bachelor course named 'Astronomy Lab and Observing Project'. As teacher assistant my task is to assist Bachelor students in their observing projects using the 2.5m Isaac Newton Telescope (INT) on La Palma.

2018–2019 **Research assistant**, *Leiden Observatory*, Leiden
As a research assistant I worked together with members of the The Low-Frequency Array (LOFAR) in order to develop and maintain a web-page on which non-astronomers could help us with cataloguing our data named 'Radio Galaxy Zoo - LOFAR'. This was done using the Zooniverse platform.

2017–2018 **Head of the Board**, *A.L.S.V. Quintus*, Leiden
For one year I have been head of the board that runs the student association Quintus. As head of the board of 9, I was responsible for leading the daily operations of a student association with 1400 members. Some of my tasks included: official contact with the municipality, the University, the police, local and national media, and other associations; as well as leading internal meetings.

2016–current **Casket Bearer**, *De Helpende Hand*, Leiden
Work for a funeral service as a casket bearer. As part of this job I have become a member of "Het Leidsche Studenten Draegers Gilde".

2016–2017 **PR Representative**, *De Museumnacht Leiden*, Leiden
I was part of the committee that organized the Museumnight Leiden (museumnachtleiden.nl). My role, as one of the three PR Representatives, was to manage the website and the social media accounts of the event.

2014–2017 **Member of various committees**, *A.L.S.V. Quintus*, Leiden
During my active years at the student association I was part of several committees. Some of the things which I've helped to manage and organize via these committees are: the bar, the yearbook, the introduction weeks for new members, and the winter sport vacation.

Spoken and Written Languages

English	Native speaker	*Spent all of my middle and high school years attending American/International schools.*
Dutch	Native speaker	*Native language.*
French	Fluent	*Lived in France for first 11 years of my life.*

Programming Languages

Python	Very Experienced	*Used for machine learning, parallel computing, data-management, general analysis, etc.*
LaTeX	Experienced	*Most of my written documents are made in LaTeX.*
C++	Intermediate	*Followed several courses in which C++ was the main programming language.*
SQL	Intermediate	*Experience with using for data retrieval from large databases.*

Research Experience

How do charged particles interact with the atmosphere of Io?

Major master research project, 2019–2020,
European Space Research and Technology Centre (ESA ESTEC)

Supervisor(s): Hans Huybrighs (European Space Agency), Yamila Miguel (Leiden University)

Simulating the charged particle depletion around Io and comparing this with in-situ data gathered by the Galileo probe. This can be used to constrain parameters of the Io atmosphere.

Using Faster R-CNN for component association in LOFAR data

First master research project, 2018–2019, Leiden University

Supervisor(s): Huub Rottgering, Kenneth Duncan, Rafael Mostert

In this project I worked towards using Faster Regional Convolutional Neural Networks in order to associate components of AGN emission in LOFAR data.

Exploratory Analysis of Sz91 Transition Disk

Bachelor research project, 2016–2017, Leiden University

Supervisor(s): Michiel Hogerheide

Sz91 is a unique proto-planetary disk that features one of the largest know central cavities. We analysed the optical depths and structures of both the gas and the dust in the disk.

Talks

Cleveringa Lezing - 29th of November, 2018 (Roermond, The Netherlands)

A restless world; who will take the lead and can we do something about it?

In honor of the lecture given by Dutch professor Cleveringa in 1940 in protest against the arrest of his Jewish colleague by the invading forces, the University of Leiden organizes yearly lectures for its alumni. Due to the work that I did for my student association I was asked to give one of these lectures as a student speaker alongside old Secretary General of NATO, Prf. Jaap de Hoop Scheffer.