

Letters-of-Recommendation

- confidential -

Letter of Recommendation for Prof. Dr. Claudio J. Tessone

30 November 2020

To the Selection Panel at University of Zurich (UZH)

This is to provide my evaluation of Prof. Dr. Claudio J. Tessone for an Associate Professorship ad personam, on the topic of "Blockchains" at the Department of Informatics IfI at UZH. Prof. Dr. Tessone has established a strong teaching and research profile in the area of blockchain, drawing on multiple disciplines including network science, information systems, blockchain, and agent-based modelling.

His research brings together unique aspects from across these disciplines which are often investigated in isolation. Blockchain, while fundamentally being a technology, has significant interactions with socio-economic systems and with emergent behaviour in large scale networks. Prof. Dr. Tessone's work has made important research contributions at the intersection of these disciplines. His research, for instance, has approached blockchain networks from a data science perspective, using cryptocurrency network transactions as socio-economic signals that help understand feedback loops within the system. These contributions to knowledge are only possible by venturing across disciplinary boundaries, particularly in the blockchain research area, and Prof. Dr. Tessone's has demonstrated his ability to successfully build these bridges across disciplines. He has a proven and productive research track record in these diverse areas from physics, economics, biology, network science, and software engineering, including publications at top-tier global venues such as Nature Communications and Physics Reports.

Further evidence of Prof. Dr. Tessone's research expertise is his inclusion in editorial roles at major international journals, as a reviewer for these journals, numerous invitations for invited talks internationally, and his participation in committees of top-tier international conferences, including the flagship IEEE Communications Society Conference on Blockchain and Cryptocurrency. He has also secured several funding grants and industry links that provide evidence of his ability to instil confidence in the relevant funding bodies and for capacity building as a research leader in a growing research area. Prof. Dr. Tessone has outlined a clear vision for future research, on which work has already started, which provides a compelling path forward for multi-disciplinary blockchain research.

Alongside his research contributions, Prof. Dr. Tessone has been an active contributor to teaching activities at undergraduate and postgraduate levels, both internally at UZH and externally. The breadth of scope in his teaching activities is reflective of his diverse research activities, and this can only be an asset to the university for growing its curriculum in the blockchain area. He has been highly active in supervision of students from undergraduate to postgraduate level which provides strong evidence of his ability to engage students effectively at the intersection of research and teaching.

In summary, I find that Prof. Dr. Tessone's research and teaching track record position him strongly for the role of Associate Professor at UZH and for leadership of the Blockchain Center. Such a leadership role in the Faculty of Business, Economics, and Informatics clearly requires a candidate that can effectively step out of their 'disciplinary' box to maximise the research relevance and impact. Having demonstrated this ability clearly, I strongly recommend Prof. Dr. Tessone for this role.

Please do not hesitate to contact me for further information.

Sincerely,



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8th December 2020

To Whom It May Concern:

I am writing this letter in support of Professor Claudio Tessone's application for Associate Professor at the University of Zurich.

I will begin with some context about myself. I am a Full Professor in the School of Computer Science and Engineering at UNSW Sydney. I obtained a MS and PhD from Drexel University, Philadelphia, USA. My research interests span Internet of Things, Pervasive Computing, Blockchain, Cyber Security and Applied Machine Learning. I have published over 250 peer reviewed articles and delivered over 50 keynotes and technical tutorials on this topic. You can find further details of my profile at my website, www.saliilkanhere.net.

It is evident that Prof. Tessone has developed a strong research program that spans the areas of distributed ledgers, socio-economic systems and data/network science. His research output during his period of Assistant Professorship has been very impressive including high-impact venues in the area including Physics Reports, Scientific Reports, PLOS ONE and top conferences such as IEEE ICBC and ICIS. His overall publication record relative to opportunity is also excellent. His Google scholar numbers are a clear indication that his research is appreciated and referenced by his peers. I am expecting many more outstanding outputs from Prof. Tessone in the not-too-distant future.

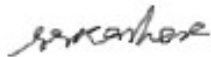
I am also impressed by his ability to secure research funding from a diverse set of sources including the Swiss National Foundation, which I understand is highly competitive and other Swiss and European schemes. I am confident that he will be able to build on these foundations and attract funding from industry and competitive schemes in the near future. Professor Tessone's involvement in student supervision is rather impressive. He is actively involved in supervising a number of Postdocs, PhD, MS and Bachelor's students and it is evident that he will be able to expand the size of his team in the years to come.

I am not directly familiar with Prof. Tessone's teaching, but I can see from the data provided to me that he is an accomplished and innovative teacher. I am particularly impressed to see the broad range of courses that he has offered across blockchain, network science, agent-based modelling and network analytics. The student reviews seem to be very positive, which is clear indication of his excellent teaching skills. He has also been active in various external teaching activities, which is rather impressive.

In summary, I think Prof. Tessone is a first-class researcher in the field of distributed ledgers and network science. He has invested substantial time in developing a new research program which is now starting to bear fruit. He has demonstrated an upward trajectory in various key performance indicators including research funding, publications in top venues, invited talks and

presentations, among others. I am very confident that he will continue with this trend and make even greater contributions to University of Zurich in the years to come. Thus, I strongly support that he be awarded tenure and promoted to Associate Professor. I have no doubt that with his talent; he would be able to secure a similar position at many high-ranked universities, globally including UNSW Sydney. Please do not hesitate to contact me if you require further information.

Yours Sincerely,



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December 11, 2020

University of Zurich
Department of Informatics
Zurich, Switzerland

Dear Colleagues,

I understand you are searching for an expert in the areas of blockchains, socio-economic systems, data science and analytics, and networks. I have some background in these areas. Following careful review of the academic record of Professor Dr. Claudio Tessone, I am writing this letter to strongly support his consideration for the position of Associate Professorship ad personam (AOPaP) on the topic of "Blockchains" at the Department of Informatics IfI.

I will elaborate on my assessment, after first summarizing my own current position from which I am making this evaluation. I am an Associate Professor at the School of Information Studies at Syracuse University, and an Affiliate of the Institute for Security Policy and Law (ISPL), a joint interdisciplinary research institute of the top-ranked (#1 - US News & World Report) Maxwell School of Citizenship and Public Affairs, and Syracuse University College of Law. I am also a member of the U.S. Department of Commerce National Institute of Standards and Technology GCTC COVID19 Task Force; a volunteer with the NIST Smart Cities and Communities Framework (SCCF) standards initiative; member of the NIST GCTC Cybersecurity and Privacy Advisory Committee (CPAC); co-lead of the NIST GCTC Secure Cloud Architecture Action Cluster; and participate in the NIST GCTC Smart City Data Ethics Action Cluster. Finally, I am a Subject Matter Expert with the Department of Defense Cybersecurity and Information Systems Information Analysis Center (CSIAC).

Regarding blockchain, I have undertaken related research since the 1990s. In the fall of 2017, a course on Blockchain Management that I developed was offered for the first time by the Syracuse University School of Information Studies. It is now a regularized part of our curriculum, and is offered for undergraduates, graduate students, and online. I have also co-led and co-organized significant academic conferences on blockchain, for example Blockchain Disruption hosted by Fordham University, spring 2018. Without elaborating further on my own research and teaching, which is not the point of this letter, I will close in terms of my qualifications for evaluating the work of Professor Dr. Claudio Tessone for the position specified, by noting my service on the Board of Editors of the *Journal of the British Blockchain Association*, JBBA, the 1st European peer-reviewed journal focused on blockchain.

Now to summarize what I know of the potential for Professor Tessone to make further contributions to your exceptional faculty. I first note the topic of his habilitation on complex socio-economic system at ETH-Zurich Department of Dept. of Management, Technology and Economics, “Agent-based modelling of socio-economic systems: Social influence and network interactions” is both perfectly aligned with the position and demonstrates mastery of both advanced technical research and sophisticated socio-economic analytic skills. I also note Professor Tessone’s recent stay as a visiting professor at the College of Bruges, an institution with which I am familiar. (I was once scheduled to give a talk there, if not for the Paris and Brussels terrorist incidents of 2016 disrupting travel.) This is a strong signal of peer recognition of the relevance and quality of Professor Tessone’s socio-economic analyses. Similarly, the University College of London - another excellent academic institution, where I gave a talk maybe 10 years ago - Centre for Blockchain Technologies is widely recognized as perhaps the premiere European academic blockchain research center. Professor Tessone’s ongoing affiliation with the Centre since 2016 speaks for itself. And likely opens doors for University of Zurich students, faculty and research scientists affiliated with the “UZH Blockchain Center” (Competence Centre of the University of Zurich), which Professor Tessone founded and serves as Chair, to partner in significant future international collaborative blockchain research efforts.

Regarding research grant awards, Professor Tessone’s record is more than competitive, and indicates likely sustained productivity at a high level as befitting an Associate Professorship ad personam. About teaching, Professor Tessone has demonstrated ability to teach on blockchain, agent-based modeling, complex socio-technical systems, and network science at undergraduate, masters, doctoral and executive education level. In short, in all the areas you are searching for expertise, Professor Tessone has demonstrated both mastery, and adaptability to adjust his teaching to the needs, capabilities and level of the students.

Regarding citations of Professor Tessone’s scholarship, his performance is exemplary and indicates high interest of other scholars in his work. The number of citations: 1698 (WoS), 3291 (Google Scholar) is quite high for a scholar at his career stage. The fact that since 2015 Professor Tessone’s work has 2157 citations, h -index=21 according to Google Scholar is extremely promising for a likely significant rise in his h-index score in the years to come. The number of doctoral students currently working with him is also quite impressive.

I also note Professor Tessone’s high level of activity as a conference program committee participant and reviewer, and reviewer and editor of journals, including as Chief Editor of **Frontiers in Blockchain Non-Financial Blockchains** (2018 - 2020); and **Blockchain Economics** (since 2020). In addition, he serves as **PLOS ONE** Associate Editor. Area: Complex Systems, Network Science, Physics (since 2018). I could go on, but it is exhausting just listing how productive Professor Tessone is 😊.

Turning to a closer review of Professor Tessone’s journal article and conference publications. Google Scholar indicates his work has been cited over 500 times in both 2019 and 2020. Further, nine

different articles have over 100 citations each. Another eight have over 50. These are gross measures of the influence and relevance of Professor Tessone's scholarship but are certainly promising indicators of the high likelihood of further growth in Professor Tessone's scholarly reputation and recognition by his peers around the world. Without going into a deep dive on all of Professor Tessone's significant publications, I will highlight **the digital traces of bubbles: feedback cycles between socio-economic signals in the Bitcoin economy**

David Garcia, Claudio J. Tessone, Pavlin Mavrodiev and Nicolas Perony, Journal of the Royal Society Interface **11**: 20140623 (2014). DOI: <http://dx.doi.org/10.1098/rsif.2014.0623> This article is both well-known, that is, frequently cited by academics but also frequently referenced in trade and professional publications which would not show up in a Google scholar citation count and is very well done.

To summarize, Professor Tessone's background in Physics is more than useful for providing him a modeling and analytic toolkit to apply to complex socio-economic and socio-technical systems such as blockchain. But tools are only that: without himself being able to think through and analyze the subtleties and contradictory factors shaping complex social systems and network effects, there would not be such high interest in Professor Tessone's scholarship. His students at all levels are fortunate to work with him, and University of Zurich is fortunate to have him (soon) as Associate Professorship ad personam (AOPaP).

Sincerely,

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Tomaso Aste

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December 17, 2020

RE: Claudio Tessone evaluation for an Associate Professorship

To Whom It May Concern:

It is my pleasure to write this statement in support of the appointment of Prof. Dr. Claudio Tessone as ausserordentliche Professur ad personam at Universität Zürich.

Research activities

Prof. Tessone ongoing research agenda is sound, timely and well-structured. The research lines are originated on methodological and conceptual advances establishing on top a unique portfolio of relevant research questions with strong potential impact. From what I can see, the amount and quality of the publications during his career is excellent. I appreciate the change of focus during the first period at University of Zurich to fit the new environment. I even more appreciate that, despite the change of focus, his output did not decrease both in terms of quality or quantity. In particular, looking at the most recent publications, they are clear and promising building blocks for future streams of research and they remarkably span across topics and approaches. For instance, the Physics Reports paper on “Nestedness” is consolidating the basis of some fundamental aspects of network theory while the Ledger one on Bitcoin is providing a very useful and practical perspective on the evolving blockchain world.

Prof. Tessone has become a reference figure in his areas of research. He is not developing research on some niche field, he is instead significantly contributing to a very competitive vast area of interdisciplinary research. There are multiple factors that allow me to justify this conclusion: several publications in various disciplines, highly reputed journals, very good citation record, etc. Further, on top of these contributions that any outstanding scholar may be producing, Prof. Tessone is also pushing forward the frontier by challenging himself in high quality forefront research on emerging topics, such as blockchain and cryptocurrencies. I had the opportunity to see some of his presentations in the area and I am persuaded that his research has tremendous potentials. The deep thinking on the hidden incentive schemes in such complex socio-technical systems is insightful, disruptive and path opener. I am myself involved in the field, and I can tell that there is of little question that the work of Prof. Tessone will open up new areas of research even in this new field. Indeed, this is a heavily interdisciplinary area of research that is still being shaped and Prof. Tessone fits perfectly into this multidisciplinary environment. I am therefore convinced that he will become a dominant figure in the nascent field of digital economy and cryptofinance.

From his research outputs it is very clear that Prof. Tessone is committed to bringing his research to an applied context where he can make direct impact. And he has been successful in doing so. I can see from his CV that, indeed, he has been very active in establishing first ties with industry. The dataset crossing the social network of communication with bank is prospectively fascinating for future research with both direct impact and long-term research interests. He is also engaged in key collaborations with figures at the

interface between management and complexity science, like Brian Uzzi. Such collaborations may prove important in positioning his future research lines.

As form the evidences reported in his CV it is certain that Prof. Tessone positions himself among the leaders of his research field. His research activities evoke large interest and indeed he has been invited as speaker to multiple conferences including -notably- the APS March Meeting: the most prestigious USA meeting in this domain.

Not marginal is his capability of attracting research funds that is in a clear growing trend. Again, also in this domain, Prof. Dr. Tessone demonstrates capability of convincing leadership across fields with funding from different sources for different purposes ranging from temporal networks to blockchain.

To summarize his research status, it is my opinion that Prof. Tessone has already exceeded the records that would entitle him a tenured position in top worldwide Universities. I strongly recommend to offer him this opportunity.

Teaching

Prof. Dr Tessone is an excellent lecturer and an supervisor. He had already a large number of MSc and PhD students that successfully completed they programs. His students speaks greatly about him. I had the opportunity to listen to some of the Prof. Tessone's seminars and I can tell that he is a good speaker with the capability to keep attention even when delicate topics are presented. From the list of lectures in his CV I can tell that his courses are in the line of his expertise and must give an important advantage to the students taking them. I had the chance to meet some of his former students at conferences and all talk very highly of him. I understand that his lecture style is interactive, a key feature for this kind of topics where extensive participation of the students is necessary for them to get a proper understanding of the material taught. I have been told that he also received funds to develop further these aspects. this shows the relevance Prof. Tessone assigns to the teaching activities. He also has been explorative and creative offering new courses like the *Introduction to the Economics of Blockchain*. I find it a very interesting development, making University of Zurich a pioneer, internationally in this nascent field.

It is also worth mentioning Prof. Tessone's commitment in raising students. Indeed, it appears that in the short period as Assistant Professor he has already co-supervised different PhD theses, and now has three PhD students who are supporting the research lines he has drawn as most important to him. The former also speaks of the great integration he had to his current position.

Conclusions

By analysing the milestones achieved after taking his current position, I can only come to the conclusion that Prof. Tessone is an outstanding member of the academic community. His overarching research interests and academic outputs fit perfectly the position combining technical aspects of statistical physics with socio-economic investigations and data science. Further, Claudio is the obvious and hard-to-beat candidate for the leadership of the UZH Blockchain Center.

Please do not hesitate to contact me for any further clarification and comments

Sincerely,


Tomaso Aste

UNIVERSITY OF CALIFORNIA, DAVIS

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December 7, 2020

Dear Professor Stiller,

It is my pleasure to write this short letter recommending Dr. Claudio Tessone for the position of Associate Professor at the University of Zurich UZH. From my perspective, Dr. Tessone is one of the most creative and inspired scientists in his peer group. His work has had significant impact on a broad range of areas, including network science, socio-economic systems, and data science. Dr. Tessone has a unique background and research portfolio. His quantitative approaches are grounded in his training as a theoretical physicist and data scientist, but the systems he studies are very novel spanning a realm of socio-economic considerations. He has a significant body of work on mathematical and computational models of opinion dynamics and social influence. Likewise, his work on Bitcoin networks is very significant, revealing feedback cycles involving human behavior that drive fluctuations. He has also done quite impressive work on the foundations of network theory, including his work uncovering the pervasive role of “nestedness” (a type of network architecture) in socio-economic and ecological systems, as well as foundational work on mesoscopic structure and organization in networks.

Dr. Tessone is a very prolific and productive scientist who brings tremendous creativity to tackle novel problems at the forefront of socio-economic systems. Given his record, he would certainly qualify to achieve the ranks of a tenured Associate Professor at my University. More over, his star is clearly rising as shown by the number of his invited talks and the exponential growth in rate of citations to his scientific publications.

My apologies but given the difficult circumstances we are in these days I have time only for this short assessment expressing my strongest endorsement of Dr. Tessone.

Sincerely,

A handwritten signature in blue ink, appearing to read "Raissa D'Souza".

Raissa M. D'Souza

Professor, University of California, Davis

Computer Science Department

Mechanical and Aerospace Engineering Department

Fellow of the American Physical Society

Fellow of the Network Science Society

External Professor and Member of the Science Board, Santa Fe Institute

President, The Network Science Society, 2015-2018

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December 13th, 2020

To whom it may concern:

Dear Sir/Madam,

I am very pleased to write this recommendation letter for Dr. Claudio Tessone. I have known him for many years but we never collaborated, so my judgement is not biased by conflicts of interests. Dr. Tessone is a visible member of the broad and growing community of complex systems scholars. He has been dealing with a variety of problems, ranging from network science, with a particular focus on social networks, opinion formation, social influence, and in the last years the complexity of economic systems, from bitcoins to blockchains. In the latter topic, in particular, he has acquired a prominent role and he was among the first members of our community to dedicate himself to it, which shows vision. His citation statistics and progression testify the growing visibility that Claudio has been receiving. He has authored close to 100 publications, some of which have appeared on high profile journals like Physics Reports, Physical Review Letters and Nature Communications. Also, he has an impressive list of collaborators, both inside and outside UZH.

Despite having taken mostly research positions he has also sought several opportunities for teaching, in particular modern disciplines like network science and Blockchain complexity. He has been also active in fund raising and also there he has shown to not shy away from leadership roles.

I would like to emphasize the growing responsibility and leadership that Dr. Tessone has acquired, in particular with respect to UZH Blockchain Center, of which he is currently Chairman and has been a co-founder. There are many activities within the center (symposia, international lectures, industry events, etc), and I understand from the leading role of Claudio that he has an operational role in them. Further, from personal experience I can claim that cultivating industry collaborations as Dr. Tessone has done (very important in such an active spot like Switzerland) is a very time-consuming task, but potentially highly rewarding, in terms of research, education and funding.

Overall I see Dr. Tessone as the most prominent figure within our community to deal with cryptocurrencies. His training, background and exposure will guarantee rapid visibility to UZH Blockchain Center. I could not think of anybody else who has all the required knowledge and experience to pull this through. I recommend him most strongly for the associate professorship he is being considered for.



INDIANA UNIVERSITY
NETWORK SCIENCE INSTITUTE



Sincerely,

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