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Setting: this is a continuation to the previous interview about work
Participants: IS4 is the boy with glasses and a very fluffy sweater.
S1 is the girl in blue.

0:00
Xxx IS4:   um <u>real</u> process
Xxx S1:   okay so c- can you tell me some (.) applications
Xxx IS4:   >applications< mm
Xxx S1:   you know ((stutters))
xxx   that you will apply -
xxx   applications where you take the
xxx   knowledge that you had from this course=
xxx IS4:   =in addition to the: to the parachute=
xxx S1:   =yea
xxx IS4:   ((subject seems pretty baffled.))
xxx   ((pause))
xxx   uh:
xxx   let me think like like the trajectory of the spaceships
xxx S1:   mhm
xxx IS4:   it can it can be the
xxx   one of the gravitational gravitational equations
xxx   gonvern uh: govern how the spaceship will move
xxx   so it- it is an equation
xxx   and we can use-
xxx   we can use our
xxx   our maths to solve this equation
xxx   and we we can finally get the trajectory of how the
xxx   spaceship move.
xxx   and how the
xxx   another is in I think is in biology.
xxx   like the number of- the number of uh species
xxx   like you know
xxx   uh for example if there is some deer,
xxx   if there is some deers or wolves,
xxx S1:   mhm
xxx IS4:   uh: on uh (.)
xxx   deers and wolves in a jungle
xxx   and there are some a certain-
xxx   a certain amount of deers
xxx   and certain amount of wolves,
xxx   and now we can use we can use the equations
xxx   to predict how the numbers of deers and wolves.
xxx   uh: vary in the future.

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xxx        and: (.)
xxx        and-
xxx        sometimes the equations will give us the deers will-
xxx        will vanish.
EXA        and the wolves will go high high high and unbounded
EXA        high- highly.
xxx        and- and sometimes else we will-
xxx        w- w- will get a solution that (.)
xxx        the deers will go higher and higher
xxx        and the wolves will be diminished.
xxx S1:    mhm
xxx IS4:   and but the- but- but-
xxx        but the most- but the most favorable thing we want to
xxx        see is that
xxx        the deers and the wolves will-
EXA        ((makes balanced hand gesture))
xxx S1:    balance.
xxx IS4:   ((nods))
xxx        yea will find a balance
xxx        and will come to a equilibrium state.
xxx        and their numbers will like
xxx        higher lower higher lower higher lower
xxx        and in this- in this time we- we can
xxx        use the equations to predict how it will go.
xxx        and we can use (.)
xxx        and we and even more we can use- we can use
xxx        the initial conditions to control their-
xxx        to control their numbers.
xxx        because when (.) the solutions of a- of a differential
xxx        equations depends on- depends on initial condition.
xxx        which means like the current number of deers and
xxx        wolves.
xxx S1:    mhm
3:00
xxx IS4:   and if we can control this number.
xxx        we can-
xxx        we can we can m- make these numbers to be
xxx        in our control.
xxx        like (.) get a balance and this species can be-
xxx        can- can live in a very healthy way.
xxx        so I think that's how-
xxx        how the- (.) how the equations and numerical analysis
xxx        be applied i- in biology.
xxx        i- i- it there are many other applications.
xxx        but uh: I think it'-s it.s everywhere in our life.
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xxx        so
xxx S1:    but it's so nice you know,
xxx IS4:   ye
xxx S1:    i- i- i- it because we don't really know the importance
xxx        of what
xxx        [you do unless y- y- [you tell us
xxx IS4:   [yea               [yea
xxx S1:    other times we just take it for granted.
xxx IS4:   ((nods)) yea and-
xxx S1:    and you can only say you know the number of deers and
xxx        wolves are the same [because its just nature,
xxx Is4:                       [ yea it eh:
xxx S1:    we are not thinking about all the work you have been
xxx        you know [have been doing to maintain this balance,
xxx IS4:           [((agreement noises))
xxx S1:    so uh can you think of other other interesting
xxx        applications? This one is so interesting
xxx IS4:   uh wh-wh- what?
Xxx S1:    can you think of some other you know applications?
Xxx IS4:   ah you mean that can be seen in daily lives?
Xxx S1:    why not ((starts drinking water))
Xxx IS4:   oo ((sits back and thinks))
Xxx        applications in daily lives
Xxx        space ships…
Xxx        ((pause))
Xxx        nothing
Xxx        like in (.) finance?
Xxx S1:    okay
Xxx IS4:   of course math and uh partial differential equations
xxx        plays a very important role in fin↑ance.
xxx        wh- ma many (.2)
Xxx        in Wall Street many companies are are using the- using
xxx        the-
Xxx        different kind of equations to predict,
Xxx        how the- how the prices of the options the stocks,
Xxx        or some or something else,
Xxx        they they um they they use equations to predict
Xxx        how the how the prices will go.
Xxx        and they use this to make profits.
Xxx        that that's application and (.)
Xxx        y:ea it's.
Xxx        it's how they intelligent ones can make- can make a
Xxx        much money.
Xxx S1:    ((in really low voice)) yea that's true
EXC IS4:   yea applications ((breathes in)) and ((tsk))
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EXC        I don't-
EXC        I think there are some more
EXC        but I can't name- (.) name more now
EXC        many (.) yea:.
6:00
Xxx        if: (.3) ((nods)) yeah I think that's all I-
xxx        all I °(have)°
Xxx S1:    ((nods)) all in mind [right now
Xxx IS4:                        [yea..
Xxx S1:    okay um: so ah-a
Xxx        so we talked about technological advances
Xxx        and you told me about this nice reality uh
Xxx        advancement,
xxx        and it's so cool.
Xxx        can you c-c-c-an you tell me more about some:
Xxx        advance:s um: (.) s- s- some somethings  that are um
Xxx        ((IS4 seems pretty tired and sad there are more
Xxx        questions))
Xxx        that are now uh (.) uh in progress that or uh
Xxx        that are kind of hot  (.) in China?
Xxx IS4:   in China.
Xxx        uh: ((makes a face))
Xxx        uh ((groans)) in China
Xxx        ((pause))
Xxx        you mean what kind of like new uh
Xxx S1:    te- tech- technologies <new technology>.
EVC IS4:   technology ((brings hand to head wipes head))
EVC        I don't- I don't think technology in China is
EVC        I think the (.)
Xxx        I think the most impro-
Xxx        uh I think the most progress that
Xxx        have made in technology is most eh
Xxx        i-i- in United States.
Xxx        in China I can (.)
EXC        >I don't know I don't know<
Xxx        ((pause))
Xxx        yea
xxx        I don't know many-
Xxx        I don't think China has many-
Xxx        as-
xxx        like very important improvements right now.
Xxx S1:    but the thing is.
xxx        China is very industrial.
Xxx IS4:   yea it is true but,((pause))
Xxx        they are different because we: blocked-
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Xxx   it's a different world I think.
Xxx   we blocked Google we blocked Facebook.
Xxx   and now we are the only two countries in the world
Xxx   that cannot use Google. ((laughs))
Xxx   so (.) it's I think we can-
Xxx   our- our search engine is just simulating Google's.
Xxx   and so: it-
xxx   in Google's have- have made so much,
Xxx   >so much technology improvements and,<
Xxx   like alpha go.
Xxx   the- the robot to beat ((name)) is created by Google.
Xxx   but- but in China we (.) we can ne-
Xxx   in current state we cannot do (.) such a thing.
Xxx   and (.) and
Xxx   we still have <a- a long way to go>. an:d-
Xxx   and most of the industry in China
9:00
Xxx   we can- we can say it as uh- <u>simulating</u> of the
Xxx   of the industry in United States or Europe
Xxx   so: it's not (.) it's not good but
Xxx   it's the case and i-it's just the current case.
Xxx   yea so I do- if you want me to say some
Xxx   technology (improvements) in China I cannot-
Xxx   cannot say much.
xxx   yea.
Xxx   ((pause))
Xxx S1:   alright can you just tell me just you kno:w
Xxx   some other you kno:w-
xxx   in- interesting technologies and uh,
Xxx   can you just explain to me in plain English
Xxx   <because you know> I wouldn't understand <u>details.</u>
Xxx IS4:   ((the subject IS4 seems a bit distressed))
Xxx   technology (.) uh:
Xxx   I thi-
Xxx S1:   new improvements
Xxx   new
Xxx IS4:   I think most of the
Xxx   the important uh
Xxx   I don't know much because the only access I get to
Xxx   the technology is- is (news) so. ((laughs))
Xxx   ((breaths in)) uh yea
Xxx   I think we have talked about the alpha go,
Xxx   we have talked about the robot,
Xxx   so (.) the reality enhancement,
Xxx   I think,

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Xxx         yea I- I- I only know this.
xxx         I don't know more.
Xxx S1:     ok
Xxx         so can you give me some
Xxx         do you know some more details about the technical
Xxx         details of the reality enhancement
Xxx         are you know-
xxx         designed developed?
Xxx         do you have some you know technical:
Xxx         you know background
Xxx         on how
Xxx         the-these technologies is working?
Xxx IS4:    no because it is-
xxx         I think this is uh kind of a [secret for
Xxx S1:                                 [ouuu
Xxx IS4:    Microsoft and it is still being developed
Xxx         in their labs so:
Xxx         the the the only thing that we know about it is
Xxx         this video.
Xxx         and this video has explosive (.) in fact on the
xxx         internet.
Xxx         w- everybody sees that very important thing.
Xxx         but- but it is just a video now.
Xxx         ((s1 nods))
Xxx         so: everything else is still in the labs.
Xxx         so I- I don't-
Xxx         nobody knows how it works.
Xxx         so we can only wait.
Xxx S1:     alright so
Xxx         so going back to the point
Xxx         in China you can't use Facebook or Google.
Xxx         is it easy for the government to shut dow:n,
xxx         this kind of access?
Xxx IS4:    I think it's-
12:00
Xxx         I think it's easy because the:
xxx         technology is very simple.
Xxx         you just block some( .2) block some IP or something
xxx         else,
Xxx         and we can and- and Facebook and Google can disappear
Xxx         in China land. um:
Xxx         but I- <but I think the most important thing is to>
Xxx         find a replacement of Google and
Xxx         Facebook and everything else in China.
Xxx         and I think- I think China is doing well in this field
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Xxx          we: have own search engines,
Xxx          we have our own social
Xxx          media, and- and now
Xxx          in fact in (Chinese people are living good).
Xxx          but- mm
xxx          but if we want to make some-
Xxx          but if we want to have some uh
Xxx          some- some leading power in the industry like Google
Xxx          there is a long way to go.
Xxx          so tha- that's
Xxx          that's how-
xxx          that's the goal of these Chinese industries.
Xxx S1:      what I real what I really like about it is
Xxx          is like you found a way to replace (.) to exists=
Xxx IS4:     =yea
Xxx S1       it- it is not really as advanced Google but still
Xxx          you found the replace and uh means.
Xxx IS4:     yeah because there are markets in China
Xxx          and anti- there are markets and people
Xxx          doing doing the ((unclear))
Xxx          and make great profits in it so:,
Xxx          that's another good way to- to:-
Xxx          (trigger) the economics in China.
Xxx          (.2) yea f- the the replacement is mo- almost
Xxx          simulating the things that Googles (.) are doing.
Xxx S1:      ((unclear))
Xxx IS4:     so it's simple but- (.)
xxx          but it really change-
xxx          it really change people's lives.
Xxx          so that's good!
Xxx S1:      so what about hackers,
Xxx          don't you have problems with hackers?
Xxx IS4:     hackers?
xxx          hackers is (.)-
Xxx          I think ever everywhere-
Xxx          every place has hackers.
Xxx          and they do something good and they do something ba:d.
Xxx          um: but no: (.)
Xxx          I don't think they are-
Xxx          they're a problem.
Xxx          yea
Xxx S1:      alright
Xxx          let me ask a question
Xxx          maybe it's not relevant to you but um:.
Xxx          they say that bank-
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xxx        if -if- if you are using online  [banking
Xxx IS4:                                    [ye
Xxx S1:    i-it's very difficult for hackers to hack into your
Xxx        account.=
Xxx IS4:   =yea
Xxx S1:    so c-can you tell me more about that?
Xxx IS4:   I don't-
xxx        because I'm not-
Xxx S1:    you don't-
Xxx        ((both wave hands at each other and smiles))
15:00
Xxx IS4:   I'm not a computer scientist student.
Xxx        I'm learning math so I don't-
Xxx S1:    you're learning math.
Xxx IS4:   bu- but you think I'm learning stem?
Xxx S1:    I don't think you're learning stem.
Xxx        I think they're relevant somehow.
Xxx IS4:   >yea yea yea<
Xxx        now if many people-
xxx        many people when learning our field will-
Xxx        like will think-
Xxx        everyone if he knows physics
Xxx        he knows should math.
Xxx        if he knows math he should know computer science,
Xxx        and if he-
Xxx        and maybe biology,
Xxx S1:    but you are taking computational math so-
Xxx IS4:   but computational math is different from computer
Xxx        science you know.
Xxx        computer science is to make the softwares.
Xxx S1:    yea yea that's true
Xxx IS4:   but computational applied math is to-
xxx        to use the computers to solve the math problems.
Xxx S1:    yea yea that's true.
Xxx IS4:   so that's uh ((tsk)) in fact they're different.
Xxx        so I don't know ((laughs)) I don't know the bank,
Xxx        yeah I don't know the secret (elements) behind the-
Xxx        but I think it is very safe.
Xxx        since everyone-
Xxx        I think almost everyone is using com- internet banking
Xxx        now and(.) the:-
xxx        the cases their-
xxx        their account is stolen
Xxx        is very (.) rare I think.
Xxx        so I think it's safe.
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Xxx S1:    I'm sorry I'm ignorant.
Xxx IS4:   ((laughs))
Xxx S1:    you- you know physics you might as know math.
Xxx        or you might as know computers you know how to use-
Xxx IS4:   but in fact they are very different.
Xxx        and in even the different colleges.
Xxx        in in different departments-
Xxx S1:    there is this kind of interaction you know between
xxx        them.
xxx IS4:   yea y:ea but-
xxx        the technology details will be-
xxx        one cannot know th-
xxx        the details of
xxx        computer science and math and physics-
xxx S1:    yea that's true.
xxx IS4:   mhm it's very difficult.
xxx        yea so: .hhh
xxx        yeah I think
xxx        computer science problem is very-
xxx        I- I- I- I'm not in that field.
xxx S1:    okay
xxx        can can you tell me
xxx        can you tell me more about your field?
xxx        I wanna see whether we're ((leaves again))
xxx        can you tell me >just a little bit
xxx        more< about your field?
xxx IS4:   my field computational applied math
xxx        and uh-
xxx        in addition to the-
xxx        in addition to appli-
xxx        and uh of course no parachute topics and uh
xxx        no-
xxx S1:    if someone doesn't know entirely about your field.
xxx        and you want to give them a brief introduction.
xxx IS4:   computational applied math (.)
xxx        uh: um:
18:00
xxx        ((fixes mic)
xxx        so: eh if I put it in a general way. (.)
xxx        its just use computers
xxx        to so solve math problems.
xxx        and applied math problems.
xxx        and it is very general because,
xxx        every professor has done different things.
xxx        like my professor is uh:
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xxx        the professor in my group is doing the parachute.
xxx        and ano- another
xxx        some professors are doing-
xxx        ((recalls something)) doing some physics problems.
xxx        yea it is also- it is also some kind of
xxx        using- using computers to:
xxx        solve the applied math problems.
xxx        in this case the math is applied physics problems.
xxx        some- some specific physics- physics problems.
xxx        an:d (.) it is very- (.)
xxx        it can (covers) a very broad topics.
xxx        and-
xxx        some professors are doing:
xxx        are doing- more theoretical aspects of.
xxx        like- like just de- develop theorems to solve the- (.)
xxx        to solve the equations.
xxx S1:    mhm
xxx IS4:   so they don't- (.) they don't take into acc-
xxx        take into account the real problems.
xxx        where they use physics or
xxx        chemistry or
xxx        or like um:
xxx        or like parachutes
xxx        ((S1 nods))
xxx        <they don't care>
xxx        they- they- they just care about the-
xxx        the algori- the algorithms to- to solve the equations.
xxx S1:    they're more into the theoretical?
Xxx IS4:   yea
Xxx        theorical yea
Xxx        different professors are doing different things.
Xxx        and the these things can be very different.
Xxx        the only thing that I can say is that to use computers-
Xxx        computers to do with the applied math problems.
Xxx S1:    yea [I see
Xxx IS4:       [yea
Xxx S1:    ok I think we can uh stop right now
Xxx        because we [uh did 50 minutes
Xxx IS4:              [ ok thank you
Xxx S1:    ok thank you
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