that is not a new computer *per se*
but that is a new internet
de facto.

I'm Philip Emeagwali.

56 Contributions to the Computer

I began my quest for the fastest
supercomputer in Nigeria (Africa)
and began as a human computer
that computed with his brain.
Back in Saint John's Primary School,
Agbor, Nigeria (Africa),
I developed an interest
in doing the fastest arithmetical
computations
using only my brain.

But I was not fast enough
as someone using a computer.
I needed to perform the fastest
calculations in the world.
For that reason,
I had to perform the fastest calculations
on a supercomputer,
or the fastest computer in the world.
The supercomputer
that was the fastest computer
in the world
that I began programming
at age nineteen
and on June 20, 1974
in Corvallis, Oregon, United States
was different
from the modern supercomputer.
To invent
is to create **something**
out of **nothing.**

Back in 1974, the supercomputer
computed with only one processor,
or with only one electronic brain.
One processor is not fast enough
to solve my problems.
During the fifteen years
following June 20, 1974,
that I began programming
supercomputers
I figured out
how to perform the fastest calculations
and how to do so **across**
a new internet
that I visualized and programmed
as a new global network of
65,536 processors,
or as many tiny computers.
That **new supercomputer**
encircled a globe
and encircled it

in the manner
the internet encircled a globe.
The faster the supercomputer
the more problems it can solve.
The fastest supercomputer
can occupy the space of a **football field**.
I discovered that using only one
processor
to solve the toughest problems
was like putting the wings
of a jet aircraft upon an ocean liner.

57 Contributions to the Supercomputer

I am a supercomputer scientist.
The supercomputer
is the fastest computer.
The supercomputer was invented
to be used to perform

the fastest calculations in arithmetic.
Such calculations must be performed
to solve the toughest problems
arising in science and mathematics.
In 1989, I invented
how to use a new internet
that is a new global network of
65,536 processors
or a new global network of
65,536 computers
and I figured out
how to use that new internet
as a new supercomputer
that can perform calculations
in arithmetic
and I figured out
how to perform such calculations
and how to do so
65,536 times faster than
only one computer
solving the same problem alone.

I visualized that fastest supercomputer
as a new internet
that is powered by 65,536
tiny computers
that encircled a globe
and that solves 65,536
tough problems
at once.

At that time, it was believed that
it will be impossible
to solve the toughest problems
arising in science and mathematics
and solve them 65,536 times faster.
I'm the supercomputer scientist
that was in the news
back in 1989
for figuring out
how and why computing many things
at once
makes computers **faster**

and makes supercomputers **fastest**,
namely, **the Philip Emeagwali formula that then U.S. President Bill Clinton described in his White House speech of August 26, 2000.**

The reason my contributions
to the development of the computer
made the news headlines
in 1989
was that it changed the way
we think about the supercomputer.
After 1989, we think of the
supercomputer
not as solving only one problem
at a time
but as solving one million problems
at once.
As a technological inventor,
I created something

—namely, a new internet
that is a new supercomputer—
that could have been created
but was not created.
By seeing something
where nothing existed,
the discoverers and inventors
made darkness visible.
I crossed
the frontiers of knowledge
to see a new Internet
that was previously unseen.

58 Supercomputer Inventor

The pioneer in computing
is the supercomputer inventor
that made the news headlines
and became famous for showing
other supercomputer scientists

that the impossible is, in fact, possible.
The pioneer in computing
used a never-before-seen supercomputer
and used that new technology
to make the impossible-to-solve
possible-to-solve.

Back in 1989 and earlier,
the leaders in the field of computing
believed that it will forever remain
impossible
to use eight processors—each akin to
a tiny computer—and use them
to cooperatively solve
the toughest problems
arising in science and mathematics.
I am a pioneer in computing
because in 1989,
it made the news headlines
that an African supercomputer wizard
in the United States
had used 65,536 tiny computers

to solve the toughest problems
arising in science and mathematics.
Those problems were called
the Grand Challenges of computing.
I am that African
supercomputer scientist
that solved
the Grand Challenge problem
of computing.

I am a pioneer in computing because
I was the first
supercomputer scientist
to explore or settle
in the **new land**
of the **new supercomputers**
that computed 65,536 things **at once**.
I am a pioneer in computing because
back in the 1980s
there was only one supercomputer
in the world
that was computing with

65,536 processors,
or 65,536 tiny computers.
That never-before-seen supercomputer
only allowed one full time programmer
to program it at a time.
I was the only fulltime programmer
that used that supercomputer
at all times.
I am considered a pioneer in computing
because
I was the only fulltime programmer
of that first modern supercomputer.
But more importantly,
I am a pioneer in computing because
I contributed new knowledge to
computer science.
That new knowledge was my invention
that was completed
on the Fourth of July 1989.
That pioneering invention
won me the top prize in supercomputing

and made the news headlines.
That pioneering invention
was how to use
a new global network of
65,536 processors or computers,
or a new internet,
and how to use that new technology
to solve the toughest problems
arising in science and mathematics.
That is the reason
I am the subject of school reports
as a pioneer in computing.

59 Struggles to Invent a Supercomputer

I'm a supercomputer scientist.
I am a pioneer in computing because
there was no instruction manual
on how to harness the power
of the at that time **never-before-seen**

supercomputer
that could solve 65,536 problems
at once
and that was abandoned
for me to program alone.
Nor was there a help desk
that could explain
how I could send and receive
at the same time
64 binary thousand emails.
Back on June 20, 1974,
when I began to program
supercomputers that only solved
one problem at a time
there were an average of
24 programmers
logged into the supercomputer
that I was programming.
Those were the good old days
when it was possible
to program
the world's fastest supercomputer
and do so alone.

On June 20, 1974,
in Corvallis, Oregon, United States,
I even had a supercomputer instructor,
had a supercomputer instruction manual
and a supercomputer help desk.
But a decade and half,
onward of June 20, 1974,
in Los Alamos, New Mexico,
United States,
I was the lone wolf programmer
that was at the **farthest frontier**
that was the supercomputer
that could solve
the most challenging problems
at once.
For that experimental supercomputer
of the 1980s,
only one person can control its
65,536 processors.
Only one person can lock
all its processors

and lock them simultaneously.
I was the lone wolf
that was at the **farthest frontier**
of the massively parallel processing
supercomputer.
I was the supercomputer scientist
that controlled all those
65,536 processors
and controlled them at all times.

60 Struggles in Nigeria

I'm a supercomputer scientist.
You become a computer scientist
by learning about computers
and doing so for four or more years.
On the other hand,
you only become a supercomputer
scientist
by programming
the fastest supercomputers
in the world

and by developing
the reputation as one of the best
supercomputer scientists.
The fastest supercomputers
that I programmed
costs the budget of a small nation.
For that reason, to become a
supercomputer scientist required that
I live and work in rich nation
like the United States.
When I was born,
there was no supercomputer in Africa.
I was born on **August 23, 1954**
in Akure, **Nigeria** (Africa).
I was the oldest of nine children
in my family.
My father, Nnaemeka James Emeagwali,
was a nurse
and my mother, Iyanma Agatha
Emeagwali,
was a homemaker.

In 1954, the word “computer”
was not in the vocabulary
of any Nigerian newspaper.
In 1954, to say that I would become
a supercomputer scientist
will make as much sense
as saying that I would travel
to the Moon.
Because there was no supercomputer
in Africa,
I could not become
a supercomputer scientist
in Akure, Nigeria (Africa),
where I was born in 1954.
On the other side of the world,
Los Alamos, New Mexico,
United States
is the capital of the world of
supercomputers.
My struggles
to become a supercomputer scientist

was a technological quest
to traverse the seven thousand miles
and the Atlantic Ocean
that separates Akure, Nigeria (Africa)
from Los Alamos, New Mexico,
United States.

61Struggles in Refugee Camps

The Nigeria Biafra War
began on July 6, 1967
and ended on January 15, 1970.
One in fifteen Biafrans
died in that 30-month-long war.
During the Nigeria Biafra War
all schools in Biafra were closed.
I came to the United States
on March 24, 1974 at age nineteen.
Due to the Nigerian Civil War,
I was enrolled in school

for only one and half years
of the six years
that preceded my arrival
in the United States.
For that reason, I had to teach myself
mathematics and physics
and do so
during those six war-related years.
Mathematical physics
is the bedrock of the supercomputer.
My quest was for the then
never-before-seen supercomputer
that could solve many problems **at once**.
When I began that quest
on June 20, 1974
I didn't have a map
and a guide
to the land of the never-before-seen
supercomputers
that could solve many problems **at once**.
Because I didn't know exactly

where to discover
that new supercomputer,
I followed a zig-zag path
and I travelled seventy thousand miles
to cover the seven thousand miles
between Nigeria
and the United States
and become the supercomputer scientist
that figured out how to solve
65,536 problems **at once**.
In my 35-year-long trip,
from 1954 in Nigeria
to 1989 in the United States,
my final destination
was the frontier of human knowledge
where we could solve
millions upon millions
of problems **at once**.
In those three and half decades,
I had a three-year-long stopover
as a 12-year-old refugee

that lived in refugee camps
in Biafra.
I had a six-month long stopover
as a 14-year-old soldier
in the Biafra army.
One in fifteen Biafrans died
during the 30-month long
Nigeria Biafra War.
I had a dozen stopovers
in American cities
between Corvallis (Oregon)
where I began supercomputing
on June 20, 1974
to Los Alamos (New Mexico)
where I figured out
how to compute **across**
a new internet
that is a new global network of
65,536 processors.
I invented the technology
on the Fourth of July 1989.

I visualized that small internet
as my room-sized copy
of the Internet
that encircles the planetary-sized Earth.

62 Struggles in Elementary School

My struggle to become a pioneer
of the supercomputer
was a struggle from
being the last in computing
to becoming the first in supercomputing.
In the year 1960, I failed
and I came last
in all three terminal examinations
of my first-grade class
in Saint Patrick's Primary School,
Sapele, Nigeria.
That failure made my father unhappy.

To help me do better in school,
my father taught me in the evenings
and gave me extra homework.
With my father's guidance
and daily tutoring
I became a much better student.
I was a good student because
I studied long hours and I did my own
science experiments.
I was curious about mathematics
and physics
which other children found difficult
and boring.

63 Struggles in Refugee Camps

My childhood was difficult
because of the violence
and the revolts that erupted
in the streets

of Nigeria in the late 1960s.
The 30-month long
Nigeria Biafra War
forced my family to flee
and live in refugee camps
in Nigeria and Biafra.
Due to the Nigeria Biafra War,
I could only attend school
for one and half years
between ages twelve and nineteen.
The reason was, in part, because
during the Nigeria Biafra War,
all the schools in Biafra were closed
and used as military barracks
and refugee camps.
All inventors must go to school
to acquire the knowledge
they must have in order to contribute
their new knowledge,
or inventions, to existing knowledge.
A refugee child

that could not go to school
cannot grow up to become
the inventor
of a never-before-seen supercomputer.
On my 14th birthdate, August 23, 1968,
my family of nine refugees
were living and sleeping
in a very tiny classroom
of a closed school
that was formerly named
Saint Joseph's Secondary School,
Awka-Etiti, Biafra.
In the late 1960s,
Saint Joseph's Secondary School
became an overcrowded refugee camp.
For three war years, the former students
of Saint Joseph's Secondary School
were forced to quit school
and forced to give up their classrooms
to a thousand refugees

that fled from Asaba and Onitsha,
including my family of nine refugees.
The former teachers
of Saint Joseph's Secondary School
were forced to join the Biafra Army.
Some of those Biafran teachers died
fighting at the Onitsha War Front.

64 One Day We Had to Run!!

On January 19, 1968,
the day Awka (Biafra)
was captured by the Second Division
of the Nigerian Army,
we fled a few hours before Awka
was captured
and fled to become refugees
at 14 Mba Road, Onitsha, Biafra.
The famous English spy

Frederick Forsyth
and author of the bestselling book
"The Dogs of War"
was a journalist in Biafra
and the author of the book
"The Biafra Story."
Frederick Forsyth
toured our refugee camp
in Awka (Biafra)
and toured it
after our camp was captured
by the Nigerian army.
Frederick Forsyth reported
in his book "The Biafra Story:"

[And I quote]
"At Awka, I saw the corpses
of the occupants of a refugee camp....
The men folk
had had their hands tied

before shooting;
to judge from appearances,
the women had been subjected
to appalling mutilations
either before or after death.
The bullet broken bodies
of the children
lay scattered like dolls
in the long grass."
[End of quote]

65 The Graves Are Not Yet Full!

Please allow me to quote
an eyewitness account
that was titled:

"Nightmare in Biafra."

This eyewitness account

of the night of March 20, 1968
that we fled Onitsha (Biafra)
appeared in the "Sunday Times"
of London [England]
and appeared on page 12
of the April 26, 1968 issue:

[And I quote]
"I have seen things in Biafra this week
which no man should have to see.
Sights to search the heart
and sicken the conscience.
I have seen children roasted alive,
young girls torn in two by shrapnel,
pregnant women eviscerated,
and old men blown to fragments.
I have seen these things
and I have seen their cause:
high-flying Russian Ilyushin jets
operated by Federal Nigeria,
dropping their bombs

on civilian centres throughout Biafra ...
[End of quote]

The war correspondent
that wrote the article
"Nightmare in Biafra"
continued:

[And I quote]
"At Onitsha,
under siege from the federal troops,
the three-hundred-strong congregation
of the Apostolic Church
decided to stay on
while others fled
and to pray for deliverance.
Col. [Murtala] Mohammed's Second
Division found them in the church,
dragged them out,
tied their hands behind their backs

and executed them."
[End of quote]

66 When Boys Are Used in War

During the Civil War
between Nigeria and Biafra,
I was 12 years to 15 years in age.
My family were refugees
and lived in refugee camps.
In July 1969,
I was conscripted at gun point
and forced to become a 14-year-old
soldier
in the Biafran army.
I was sent directly
and without military training
to the **Oguta War Front.**
Oguta was a 20-hour non-stop walk
through swampy, knee-deep,

mosquito and alligator infested waters.
The **mosquitoes** buzzed louder
in my ears
than a jet fighter.
I was more likely to be ambushed
by **alligators**
than ambushed
by Nigerian soldiers.
I arrived at the Oguta War Front
a few days after
500 Biafran soldiers
fell on the ground
and fell
as if they were dry leaves.
I was conscripted
to replace
one of the 500 men that died.
At Oguta War Front,
they were more guns
than pens.

67 Struggles as an Inventor

My struggle was to reach a new land
where science **fiction** becomes
non-fiction.
My struggle was to understand
the fastest supercomputer
that everybody else misunderstood
as the slowest computer.
To invent is to understand something
that was **misunderstood**
and understand it in a new way.
I understood a new global network
of the slowest processors
as a new internet
that was **misunderstood**
as something else.
I understood the technology
as a **new supercomputer**
that encircled a globe
and encircled it

in the manner
the internet encircled a globe.

I was the first supercomputer scientist
to understand that new technology
to be a new internet.
It made the news headlines
that I had discovered
that the **impossible**-to-compute is,
in fact, **possible**-to-compute.
Once upon a time,
it was believed that
to solve millions of problems
at once, instead of solving
only one problem at a time—
was a huge waste of everybody's time.
Once upon a time,
the fastest supercomputers
in the world
performed their fastest computations
on only one processor.

Today, the fastest supercomputers
in the world
performed their fastest computations
and perform them **across**
millions of processors.
The way we think about the computer
and the supercomputer
changed after my discovery
that we can solve millions of problems
at once.
That discovery occurred
on the Fourth of July 1989.
That discovery convinced the world of
supercomputing
to change the way
it thought about the **computer**
and change the way
it thought about the **supercomputer**
and change its long-held opinion
that solving millions of problems
at once

is a huge waste of everybody's time?
Yet, solving millions of problems
at once
is easier said than done,
or easier **theorized**
than **discovered**.
A theory is an idea
that is not positively true.
I discovered that solving millions of
problems **at once**
is not
a huge waste of everybody's time.

68 Rejections as a Black Inventor

As an inventor that came of age
in the 1970s and '80s,
I was searching for new things
and searching for new knowledge
and searching for that knowledge alone.

I was searching alone, not by choice.
I did my search alone,
because I was scorned, ridiculed,
and rejected.
I was dismissed
from white research teams.
According to an Igbo [African] proverb:

[quote]
"A new fowl, in a new land,
looks at the old fowls
to learn how to crow
in their new language."
[unquote]

I was dismissed because
I was the new fowl
in the new land
of the modern supercomputer.
Back on June 20, 1974,
I was the new fowl,

in the new land
of the old supercomputer
that solved only one problem
at a time.
I did not learn from the old fowls
how to crow, or program,
an isolated processor
that defined the old supercomputer.
Also, **I am well known**
but I am not known well.
In the 1970s and ‘80s,
I was punished and ostracized
for challenging the belief
of the supercomputer world
that all supercomputers should be
powered by only one **isolated** processor.
I was called a lunatic
in November 1982
after I gave a lecture
on how to use 65,536 processors
to solve the toughest problems

arising in science and mathematics.
In 1982, everybody else believed that
parallel processing
was a huge waste of everybody's time.
For that reason,
only one young scientist
attended my **November 1982** lecture
on how to solve the toughest problems
arising in science and mathematics
and how to solve it **across**
an ensemble of 65,536 processors
that were identical
and equal distances apart.
To discover or invent
is to make the **impossible** possible.

69 Message to the Young Genius

To invent
is to turn **fiction** into **fact**.
The invention of a faster supercomputer

will increase our level of civilization
and enable our children
to do better than us.
The supercomputer
was not invented by
super intelligent aliens
from the Moon.
The supercomputer was invented
by former **second graders**.
The **second grader** of today
will turn her teacher's science fiction
to their day-to-day technologies.
The supercomputer of tomorrow
will be invented by
the **second grader** of today.
My message to **second graders** is this:

"The genius
is the ordinary person
that found the extraordinary
in the ordinary."

The **second grader**
will have the courage
to challenge the old thinking,
will ask new questions,
and will think new thoughts.
The inventor
embarked upon a hero's quest
to hear something
that was previously unheard;
to see something
that was previously unseen;
and to understand something
that was previously misunderstood.
The **second grader**
will make the world a better world
and a more knowledgeable world.
Trying to understand the future
without the contributions
of the **second grader**

is like looking at an **embroidery**
from the wrong side of the cloth.

70 Message to Future Scientists

Knowledge **grows** with time.
The 2nd *grader* will grow up
to have more knowledge
than her teacher.
The **second grader**
is the future inventor
that will turn our fiction to fact.
The **second grader**
will invent the first cyborg.
A cyborg is part human, part machine,
and part computer.
The word “computer”
first appeared in print 2,000 years ago.
Each generation redefined the word
“computer.”
Our descendants definition

of the computer
will change to perhaps become
syno**ny**mous
and correspond to our phrase

“planetary-sized super-brain
that enshrouds our Earth.”

In one thousand years,
I foresee second-graders
as super-intelligent cyborgs
that are part human, part machine,
and part computer
with a great sense of humor.
I foresee children of the distant future
to be half-humans
and half thinking machines.
I believe that the grandchildren
of our grandchildren
will not use their internet
the way we use our internet.

Their internet
will be within them
while our internet
is around us.
They will not need supercomputers
because they will be
the supercomputers.

71 No Royal Road to Geometry

I learned the **times table**
of arithmetic at age five.
My quest for the fastest calculations was
also to figure out
how to make the **impossible-to-multiply**
possible-to-multiply,
namely,
figure out how to use
65,536 tiny computers
and use them to solve

the toughest problems.
That was a journey
to the frontier of **fastest times tabling**.

In first grade, I dreaded mathematics
and I was the worst student.
My father, Nnaemeka James Emeagwali,
demanded that
I study twenty times longer
than my classmates
and I did so by solving
one hundred [100] additional
arithmetical problems
each evening.
My elementary school classmates
only solved five problems
each school day.
Studying twenty times longer
than my classmates
was why and how
I became the best student

at later schools that I attended.
The African mathematician, **Euclid**,
is considered the father of geometry.
In North Africa
and three hundred years
before Jesus Christ was born,
a young Prince
studying geometry asked his teacher,
Euclid, for an easier way
to understand geometry.
Euclid replied:

"There is no royal road
to geometry."

72 Practice, Practice, Practice

As a supercomputer scientist,
the most important lesson
that I learned

was that you cannot become
the highest supercomputer wizard
without foremost,
applying "**sitting power**,"
or sitting the longest
in front of supercomputers
or sitting longer than
any supercomputer scientist
ever sat in front of supercomputers.

The fastest supercomputer
in the world
occupies the space of a soccer field
and requires building
a new multi-storey facility
to house the millions upon millions
of commodity processors
that will enable it to execute
the fastest computations.

The supercomputer is to me

what the violin is to the violinist.
A friend who is a musician
told me that a **violinist**
must mostly practice
and not mostly read her music.
The **violinist** must go beyond
only reading her music
on her airplane flight
to perform in **Carnegie Hall**
of New York City.
The **violinist** must apply her
"**sitting power**"
to get to Carnegie Hall.
This important lesson
—of hard work, dedication, discipline,
consistency, and practice—applies to
everything we do in life.
You must play or think or dream soccer
every day
to play soccer
in the next world cup.

You must write every day
to write the next bestselling novel.
You must write at least
a million words
before you can call yourself a writer.
I wrote a million words
of supercomputer codes
before the newspapers
called **Philip Emeagwali**
the "African supercomputer wizard."
A student writing a school report
on "**Philip Emeagwali**"
asked me:

"What course do I study
to become a supercomputer wizard,
like you?"

"That's like asking
what book to read
to become a **violin virtuoso**,"

I replied.

A passenger carrying her violin
asked a New York City taxi driver:

“How do you get to Carnegie Hall?”

“Practice, practice, practice,”

was the reply the New York City taxi driver gave the **violinist**.
I learned that
the answers to the biggest questions
don’t come easy.

73 Inventing an Internet Worths More than a Touchdown

When I visit the public libraries
in the United States,
I often ran into elementary school
students
or middle school students
or high school students
doing research for their school reports.
Some school reports were titled:

"Famous Scientists
and Their Discoveries."
Or
"Great Inventors
and Their Inventions."

Since my invention

of the massively parallel processing
supercomputer
that occurred
on the Fourth of July 1989
and that made the news headlines,
thereafter, many school reports
had the title:

"The Contributions of **Philip Emeagwali**
to the Development of the Computer."

I encourage children
to continue their education
by visiting their schools
and sharing my struggles with them.
I encourage children to study science
by replying their emails
and returning some of their
telephone calls.
However, most children assume that

I am dead and, for that reason,
do not write me.
Children assume that I am dead because
most famous scientists—like Archimedes,
Galileo, and Isaac Newton—died
centuries ago
and only exist in old films
and textbooks.
It matters that my contribution
to the development of the fastest
supercomputers
is studied in American schools.
It matters because
eventually, students of today
will be the teachers of tomorrow.
Eventually, teachers of yesterday
will be companions
to the 17th century Isaac Newton.
So, I understood
how important it will be

for young black African Americans
to see another black African American
making a contribution
to the development of the
supercomputer.
I discovered that
it was not just for young black African
Americans
to see me in a leading role
but for old white European American
scientists
to get accustomed to
a young black African American
as their scientific role model.
I am not surprised that most students
writing a school report on
“Philip Emeagwali”
assumed at the beginning
that I died centuries ago.
One student that wrote a school report

on Philip Emeagwali
was surprised to see me playing soccer
with her father.
And it resonates
when a kid sees the inventor
in her school report
playing soccer with her father.
I was in the public library
in Baltimore, Maryland
when I saw a 12-year-old
and observed that he was writing a
school report
on “Philip Emeagwali.”
To encourage him in his education
and study of science,
I put my hand on his shoulder
and said:
“Please allow me to introduce myself,
I’m Philip Emeagwali.”
He reacted as if I was a ghost.

“I thought you’re dead,”
the 12-year-old asked in disbelief.
A year later, I saw him again.

“What did your teacher say
about your school report on me.”
I asked.

My teacher said:

“Anthony, you don’t need to lie
that Philip Emeagwali
put his hand on your shoulder.”

74 Dale Emeagwali

My wife, Dale, was born on the
24th of December 1954

in Baltimore, Maryland,
United States.
We met in Baltimore, Maryland
at 9:45 in the morning on
the second Tuesday in June 1978.
Dale and I got married on
August 15, 1981
and had a son named Ijeoma
on June 15, 1990.
My wife is a molecular biologist.
She is best known for her contributions
to cancer research.
Ijeoma is a computer scientist
that earlier worked at Microsoft
and Google.

75 Little Known Facts About Philip Emeagwali

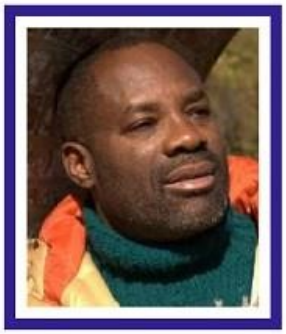
First, I lived in a refugee camp

for the last 30 months of the 1960s.

Second, I was a 14-year-old soldier
in a battlefield
where 500 soldiers were killed
a month earlier.

Third, I was a tennis player
who defeated the number seeded players
in university tennis teams. As a tennis
player, I got mentioned in local
newspapers.

Fourth, back in the mid-1970s,
I was trained as an astronomer.
Two decades later, NASA
considered me to become
the first African-born astronaut.



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